



ICSTI
IRELAND

Irish Council for Science,
Technology and Innovation

National Code of Practice for Managing Intellectual Property from Publicly Funded Research

Irish Council for Science, Technology and Innovation (ICSTI)

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The National Policy and Advisory Board for Enterprise,
Trade, Science, Technology and Innovation

Functions of the Irish Council for Science, Technology and Innovation (ICSTI)

Established 1997

- To advise on science, technology and innovation policy-related issues in response to specific requests from the Government (through the Minister responsible for Science and Technology) or from the Board of Forfás;
- To advise the Minister responsible for Science and Technology, the Office of Science and Technology and the Board of Forfás on the Council's own initiative, on policy for science, technology and on related matters;
- To advise the Minister on the strategy for the preparation and implementation of national programmes in science, technology and innovation;
- To advise the Minister on the strategic direction for State investment in science, technology and innovation;
- To undertake, from time to time, such other functions as the Minister may decide.

Endorsement by An Tánaiste, Minister for Enterprise, Trade and Employment



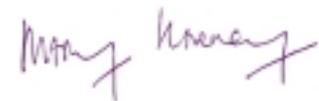
As Ireland advances as a knowledge economy, the critical path from research and knowledge creation to knowledge exploitation must be clearly defined and easy for researchers, research organisations, entrepreneurs and industry to understand and navigate successfully. Government has committed unprecedented funding to research and innovation over the past decade and in the National Development Plan to 2006. This will grow our academic base and raise the profile of Ireland as a place with excellent research. In addition, this investment in excellence is intended to drive the knowledge economy. Reaping the rewards in terms of intellectual and human capital and maximising exploitation of the results from that investment through all available avenues will be crucial to Ireland's future economic and social development.

The Irish Council for Science, Technology and Innovation (ICSTI) is timely in reviewing the management of intellectual property (IP) from publicly funded research in light of this significant increase in research funding which I expect will lead to a significant increase in the IP generated by the public research system. It is also important that such IP be well managed for the national public good.

Better understanding and new partnerships between all key players will be required and I am particularly pleased that this Code of Practice has been developed through consulting representatives of funding bodies, public research organisations, university management, technology transfer offices, the venture capital community and industry representative groups, including, entrepreneurs, Irish companies and multinational companies based in Ireland.

A world-class knowledge economy must excel, not only in the creation of knowledge, but also in its application. With the investments being made, I am confident our industries, in partnership with the universities, institutes of technology and research centres will excel in generating ideas and applications that have commercial and industrial potential. Our aim must be to excel at transforming these ideas and applications into the wealth generating commercial world and to boost our competitiveness.

I welcome and endorse this Code of Practice and I hope that all stakeholders will greatly benefit from its implementation. I am very pleased that this Code of Practice has been widely endorsed, in particular by several funding agencies, including Enterprise Ireland, the Higher Education Authority, the Health Research Board, IDA Ireland, the Irish Research Council for Science, Engineering and Technology (IRCSET) and Science Foundation Ireland and welcome the positive support from the Conference of Heads of Irish Universities, CHIU. I also welcome the positive support from the Irish Business and Employers Confederation, IBEC, and the Irish Venture Capital Association, IVCA as part of the ongoing engagement of industry with the other stakeholders in the development of the National framework for commercialisation of research. I hope that stakeholders will continue to nurture its evolution as a living document.



Mary Harney TD

Tánaiste and Minister for Enterprise, Trade & Employment

Introduction

The Irish Council for Science Technology and Innovation (ICSTI) is pleased to present this National Code of Practice for Management of Intellectual Property (IP)¹ from Publicly Funded Research. The following introductory remarks should be borne in mind when considering the Code ICSTI promotes the view that increased efforts to utilise intellectual property (IP)¹ generated from publicly funded research in Ireland can be a driver of significant socio-economic benefits. Working together, the Irish Government, the business community, public research funding and development agencies and the public research organisations (PROs)² hope to attract even more research and development (R&D) investment through encouraging a higher level of R&D activity among forward-looking indigenous firms, as well as from multi-national companies based here, to embed them in the local economy.

PROs, including for example, government funded research laboratories and agencies, hospital laboratories and third level institutions, have a range of differing missions. The key mission of the universities and Institutes of Technology, for instance, is in both education and research.

To benefit fully from the significant levels of investment in R&D in recent years, there is an additional responsibility on the PRO to ensure that commercially viable opportunities are recognised and exploited for public good.

Transparent and consistent procedures for managing intellectual property are key to transferring the knowledge generated in our PROs to industry and therefore to commercial reality.

In April 2003, ICSTI issued a Statement entitled *Utilising Intellectual Property for Competitive Advantage* which reviews the technology practices of several countries. It recommended that a National Code of Practice should be developed to improve the systems to support the identification and exploitation of Ireland's intellectual property, and that this would be implemented on a voluntary basis by PROs.

The aim of the National Code of Practice is to build on existing knowledge and expertise and to harmonise intellectual property management systems across PROs. The Council fully recognises that a number of Irish Public Research Organisations (PROs) have established Technology Transfer/Industrial Liaison Offices and existing policies and procedures that govern the management of intellectual property and commercialisation. In addition, ICSTI supports efforts to harmonise the IP terms and conditions in research funding contracts, the development of which has been closely coordinated with the formulation of this code.

1 Intellectual Property is defined in the Definitions and Abbreviations Section and further in Part III, Section A.

2 PRO is defined as a research laboratory or agency operated and funded by government and other research organisations including Universities and Institutes of Technology that receive a significant share of their total funding from public sources.

This National Code of Practice applies to intellectual property generated from research that is funded **entirely** from public sources, where no commercially funded research has contributed to the IP, and it is referred to as "Relevant IP"³ within the Code. ICSTI is of the view that initially, clarity is required concerning the management of intellectual property arising from publicly funded research and in this context presents this National Code of Practice.

The Code should not be interpreted as a set of strict rules for the management of intellectual property; rather it provides guidelines and a framework for commercialisation of public investment in R&D. Similarly, it is intended that the Code should be a living document that can respond with flexibility to the wide variety of circumstances that occur in relation to intellectual property management. In this context, Part III of the Code of Practice which deals with practical aspects of implementation of the Code of Practice, and which is included on a separate CD ROM, will be revised and updated on an appropriate timescale.

The Code seeks to emphasise that, where practicable, it is the responsibility of the PRO to commercialise technology arising from publicly funded research and to ensure that adequate resources are provided for this activity. All PROs should incorporate this principle into their strategic planning, and put this plan into action through education and training, as well as the promotion and development of commercial opportunities.

PROs are encouraged to adopt the Code on a voluntary basis to ensure robust and harmonised IP management systems are in place to deliver on commercialisation. The protection of IP is merely a step in the commercialisation process and the guidelines of the Code should be followed with this important consideration in mind.

The Code does not stand in isolation from the wider commercialisation environment, but is complementary to, and complemented by that environment. ICSTI recognises that the infrastructure to implement and maintain the National Code of Practice will be part of a broader, supportive commercialisation infrastructure and requires appropriate resources, training and awareness to succeed.

ICSTI provides this Code of Practice on the following basis:

- The Code is non-binding and may be adapted for local use by a PRO.
- The Code is a working document which may be revised and updated from time to time at the discretion of the ICSTI.
- The Code should not be interpreted as constituting a comprehensive account of the legal rights or obligations of PROs, academic researchers or other interested party. It is the responsibility of those referring to the Code to obtain professional advice as appropriate.

3 Relevant IP is defined as IP that results from research that has been 100% funded by monies provided directly by the State, or by any not-for-profit financial instrument which has been established by an organisation or individual, and awarded through a public service organisation charged with the granting and dissemination of research funds.

- The provisions of the Code should only be adopted having due regard for the terms and conditions that attach to various funding contracts, grants and awards under which IP has been generated.
- The Code contains extracts from materials that have been made available by third parties. These materials are intended for guidance purposes only and ICSTI is not responsible for their content.

An ICSTI Taskforce representing many parties involved in commercialisation in Ireland developed this Code. This was an extensive and inclusive process involving academics, funders of research, public research organisations, the venture capital community, legal review and both small and large enterprise. Through this consultation process, ICSTI have sought to encourage debate and dialogue on technology transfer and commercialisation.

The close co-operation and endorsement by several funding and other agencies, including Enterprise Ireland, the Higher Education Authority, Health Research Board, IDA Ireland, Irish Research Council for Science, Engineering and Technology (IRCSET) and Science Foundation Ireland has aided the development of the Code of Practice and will also impact positively on its implementation.

ICSTI encourages public research organisations to adopt this Code as a core base element of the Irish research system and as a tool to enable Ireland's future success as a knowledge-based economy through successful commercialisation of research in Ireland and globally.

The Code is structured under three separate parts:

- Part I:** Principles for the Management of Intellectual Property (IP) from Publicly Funded Research;
- Part II:** National Code of Practice for the Management of Intellectual Property (IP) from Publicly Funded Research;
- Part III:** Implementation of the National Code of Practice including IP Management reference material, good practice procedural guidelines, suggested checklists and templates.

Parts I and II are provided in printed form and Part III (along with Parts I and II) is provided on CD ROM.

Definitions and Abbreviations

DEFINITIONS

<i>Intellectual Property</i>	term used to describe the bundle of legal rights which in whole or in part will be comprised in the results of academic research including the following: <ol style="list-style-type: none">1. Patents;2. Copyright;3. Database rights;4. Registered designs and design right (which protect aesthetic features of a product), and also lay-out designs (semi-conductor topography rights) of integrated circuits;5. Registered and unregistered trade marks, which protect words and symbols used in the course of trade.
<i>Intellectual Property Rights</i>	the legal and beneficial title and interest in Intellectual Property.
<i>Confidential Information</i>	term used to describe information in whatever form that has the necessary quality of confidence about it, having regard to the circumstances in which it is created, disclosed or used, so as to attract protection under law.
<i>Technology Transfer</i>	a formal transferring of new inventions, creations, discoveries, innovations, processes and the like which result from scientific research conducted at Public Research Organisations to a commercial environment for public use.
<i>Public Research Organisations</i>	Research laboratories and agencies operated and funded entirely by government and other research organisations including Universities and Institutes of Technology that receive a significant share of their total funding from public sources.
<i>Relevant IP</i>	IP that results from research which has been 100% funded by monies provided directly by the State, or by any not-for-profit financial instrument which has been established by an organisation or individual, and awarded through a public service organisation charged with the granting and dissemination of research funds.

ABBREVIATIONS

<i>AURIL</i>	Association for University Research and Industry Links, UK & Ireland
<i>AUTM</i>	American Association of University Technology Managers
<i>CHIU</i>	Conference of Heads of Irish Universities
<i>Code</i>	National Code of Practice for the Management of IP from Publicly Funded Research
<i>EEA</i>	European Economic Area
<i>IBEC</i>	Irish Business and Employers Confederation
<i>ICSTI</i>	The Irish Council for Science, Technology and Innovation
<i>IP</i>	Intellectual Property
<i>IPR</i>	Intellectual Property Rights
<i>IVCA</i>	Irish Venture Capital Association
<i>PRO</i>	Public Research Organisation
<i>R&D</i>	Research & Development

PART I

Principles for the Management of Intellectual Property (IP) from Publicly Funded Research

Note: Users of the Code are reminded that it should be read and interpreted as a complete document, with particular reference to the considerations outlined in the Introduction.

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PART I

SECTION A - IP MANAGEMENT STRATEGY & IP MANAGEMENT/TECHNOLOGY TRANSFER OFFICE

A1-IP MANAGEMENT STRATEGY

Principle PRO central management should have a long-term strategy in relation to the management of IP and Technology Transfer including a strategy as to how these activities should be followed. A written policy explaining how IP management relates to and supports the overall mission of, and benefits the PRO should be developed, published and implemented. This policy should include guiding principles relating to the emphasis the PRO places on the financial and non-financial benefits of the effective management of IP exploitation and Technology Transfer.

A2-IP MANAGEMENT/TECHNOLOGY TRANSFER OFFICE

Principle A Technology Transfer Office should be established and its responsibilities clearly defined in a published policy. The Technology Transfer Office should be an integral and vital part of the PRO and its responsibilities should include:

- Identifying, evaluating and protecting IP;
- Advising on commercial and IP issues in research contracts;
- Planning and executing commercialisation strategy;
- Marketing inventions; and
- Negotiating exploitation and other technology transfer agreements.

The Technology Transfer Office should formulate a Mission Statement that specifies its priorities in line with the PRO's overall Technology Transfer strategy.

SECTION B - IP MANAGEMENT ACTIVITIES AND COMMERCIALISATION

B1-IDENTIFICATION OF IPR AND IP EDUCATION

Principle Formal procedures and/or informal interactions among PRO Technology Transfer Office and research staff should be used for the identification of new commercial opportunities arising from the creation of Relevant IP. A PRO wide policy to allow IP education and training among PRO staff should be developed and effectively implemented because establishing awareness of IP is essential for early identification of key discoveries.

B2-DISCLOSURES

Principle A formal procedure for the timely disclosure of new ideas or discoveries with potential commercial applicability by PRO research staff to the Technology Transfer Office should be established, publicised and implemented in relation to Relevant IP. The discovery should be kept confidential for a limited period of time until a timely evaluation of the case including patentability assessment has taken place.

B3-EVALUATION

Principle All disclosures of new ideas or discoveries should be formally evaluated to assess commercial potential. The basis of the process should be clearly understood and publicised. The process should recognise that each evaluation will be different and should be led primarily by the Technology Transfer Office and involve the originating researchers/inventors.

B4-PROTECTION

Principle If a decision is taken to proceed with protection by patent filing or some other form of formal IP protection, the process should be carried out using professional assistance as appropriate in a timely manner by the Technology Transfer Office involving the relevant inventors/researchers.

B5-COMMERCIALISATION

Principle Technology Transfer activities should be pursued in a timely manner through partnership between the Technology Transfer Office and the relevant inventors/researchers and with the industrial/commercial partner as appropriate. In forming the commercialisation strategy, PROs should consider whether commercially viable discoveries can be exploited. In considering the options available PROs should give priority to that strategy which they consider provides most benefit for the Irish economy.

B6-MISCELLANEOUS RESEARCH MATERIALS

Principle During Technology Transfer, due consideration should be given to the retention of know-how and research materials for ongoing research purposes and where possible it should be ensured that ongoing access to important know-how is secured for the PRO.

SECTION C - OWNERSHIP

Principle Ownership of Relevant IP should be vested in the PRO. Published policy supported by written agreements should be used to clarify and establish this position.

SECTION D - SHARING OF THE BENEFITS

Principle PROs should publish an incentive policy that clearly explains policy on royalty sharing and equity-based commercialisation income arising from exploitation of Relevant IP including provisions for sharing with inventors. Incentive structures need not be restricted to financial benefits and PROs should also consider other types of benefits.

SECTION E - CONFLICTS OF INTEREST

Principle Policy and procedures should be developed and implemented to address conflicts of interest to:

- Help alert staff to recognise areas where conflicts may occur;
- Encourage full disclosure of potential areas of conflict and open discussion with the PRO at an early stage;
- Manage and resolve conflicts where they occur.

SECTION F - MONITORING AND EVALUATION

Principle Clear systems for monitoring and evaluation should be developed and implemented as they can strengthen effectiveness of management of IP and Technology Transfer. Routine records of IP management measurement indicators can also:

- Illustrate to external organisations that the PRO is managing IP effectively;
- Identify problems and opportunities relating to IP management and to change budgets and strategies to reflect these changes;
- Be effective in tracking and recording which can be a factor in faculty retention and recruitment.

In recognition of these considerations, appropriate indicators should be designed and collected on an annual basis.

PART II

National Code of Practice for the Management of Intellectual Property (IP) from Publicly Funded Research

Note: Users of the Code are reminded that it should be read and interpreted as a complete document, with particular reference to the considerations outlined in the Introduction.

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PART II

SECTION A - IP MANAGEMENT STRATEGY & IP MANAGEMENT/TECHNOLOGY TRANSFER OFFICE

A1- IP MANAGEMENT STRATEGY

Principle PRO central management should have a long-term strategy in relation to the management of IP and Technology Transfer including details as to how these activities should be followed. A written policy explaining how IP management relates to and supports the overall mission of, and benefits the PRO should be developed, published and implemented. This policy should include guiding principles relating to the emphasis the PRO places on the financial and non-financial benefits of the effective management of IP and Technology Transfer.

A2- IP MANAGEMENT/TECHNOLOGY TRANSFER OFFICE

Principle A Technology Transfer Office should be established and its responsibilities clearly defined in a published policy. The Technology Transfer Office should be an integral and vital part of the PRO and its responsibilities should include:

- Identifying, evaluating and protecting IP;
- Advising on commercial and IP issues in research contracts;
- Planning and executing commercialisation strategy;
- Marketing inventions; and
- Negotiating exploitation and other technology transfer agreements.

The Technology Transfer Office should formulate a Mission Statement that specifies its priorities in line with the PRO's overall Technology Transfer strategy.

Code Provisions⁴ for A1 and A2

- PROs should have a dedicated Technology Transfer Office appropriate to the level of Relevant IP being developed;
- A policy should include a description of the role the Technology Transfer Office will have in its relation to other PRO departments and groups;
- The PRO should determine how the Technology Transfer Office will be structured in relation to other functions that have relevance, for example Research Services;
- A decision on sensible targets and expectations for Technology Transfer, including financial and non-financial returns to the PRO's investment in management of IP, should be considered, set annually and applied as performance assessment;
- A system should be put in place for monitoring and evaluating Technology Transfer, with the aim of strengthening the effectiveness of IP exploitation;
- Policies should reflect the PRO's adherence to relevant ethical guidelines and policies.

4 Some suggested additional general sources of information relevant to this Section and other areas of the Code are shown in Part III, Section A.

SECTION B - IP MANAGEMENT ACTIVITIES AND COMMERCIALISATION

B1- IDENTIFICATION OF IPR AND IP EDUCATION

Principle Formal procedures and/or informal interactions among PRO Technology Transfer Offices and research staff should be used for the identification of new commercial opportunities arising from the creation of Relevant IP. A PRO wide policy to allow IP education and training among PRO staff should be developed and effectively implemented because establishing awareness of IP is essential for early identification of key discoveries.

Code Provisions

- IP awareness, education and training at appropriate levels within the PRO should focus on practicalities such as:
 - The process of identifying and protecting IP;
 - The importance of confidentiality and what constitutes a non-prejudicial disclosure;
 - Understanding patentability and the patenting process;
 - Record keeping requirements including laboratory notebooks; and
 - PRO's policy on IP, reporting, ownership, protection and exploitation and who to contact.
- Effective ways of increasing awareness include IP workshops and publication of articles in a newsletter or via the internet, an intranet or by email.

B2- DISCLOSURES

Principle A formal procedure for the timely disclosure of new ideas or discoveries with potential commercial applicability by PRO research staff to the Technology Transfer Office should be established, publicised and implemented in relation to Relevant IP. The discovery should be kept confidential for a limited period of time until a timely evaluation of the case including patentability assessment has taken place.

Code Provisions

- The formulation of procedures relating to the reporting of discoveries should recognise any specific terms and conditions in relevant funding contracts;
- Procedures that provide for disclosure of new ideas and discoveries with potential commercial applicability should be swift and straightforward (through, for example, the use of standard forms and a clear system of information exchange) so that research activity is not disrupted;
- An Invention Disclosure Form⁵ or other appropriate method for collection and documentation of basic information from the inventor/author to allow an assessment of patentability should be used for assistance, as required. Other information required by the various parties involved in commercialising inventions including Technology Transfer staff, external funding bodies, patent agents, legal advisers, and potential industrial partners is also included. The headings in the form can be used as a guide to the checklist of information that is required;

5 See sample Invention Disclosure Form in Section B2 of Part III.

- The sample Invention Disclosure Form also allows for collection of information on multiple sources of research funding. This information should be obtained at an early stage in order to clarify IP obligations that may exist in relation to different individual research funders and to ensure that appropriate information is provided to funders if necessary;
- Obtaining valid patent protection depends upon the invention not having been previously disclosed to the public in any way⁶. Therefore controls should be in place to keep discoveries confidential for a limited period to allow the PRO to undertake a timely evaluation of the discovery, including patentability assessment. Confidentiality agreements⁷ should be used where appropriate;
- Effective contracts should be put in place between the PRO and all individuals creating Relevant IP to address ownership issues in particular⁸. This agreement should also include confidentiality obligations, in order to address the disclosure issues outlined above.

B3- EVALUATION

Principle All disclosures of new ideas or discoveries should be formally evaluated to assess commercial potential. The basis of the process should be clearly understood and publicised. The process should recognise that each evaluation will be different and should be led primarily by the Technology Transfer Office and involve the originating researchers/inventors.

Code Provisions

- Details provided in response to a Standard Disclosure Evaluation Form may help in the timely evaluation of a new invention or discovery⁹;
- Evaluators should consider, that the open dissemination of results relating to particular discoveries can, in some cases, be in line with the wider Technology Transfer strategy of the PRO;
- In the course of the evaluation process, all information provided in the Invention Disclosure Form (detailed in Section B2 of Part III) should be reviewed to assess the ownership position, confidentiality restrictions or other exploitation rights of interested parties;
- Additional evaluation advice within for example state agencies and industry should be sought as viewed appropriate by the PRO;
- Should the PRO decide not to pursue exploitation of a discovery, after carrying out an evaluation it may decide, in appropriate circumstances, to offer the opportunity to the inventor to pursue exploitation independently if appropriate under agreed terms;
- The evaluation process should be revisited for existing patent applications, patents and other forms of IPR in the PRO's IP portfolio at appropriate time-points to help inform decisions on continuing or abandoning IPR prosecution.

6 See Section B2 of Part III for further information.

7 Also see Section B5 of Part III.

8 See further Part II, Section C.

9 A suggested checklist for the evaluation process and Sample Evaluation Form are shown in Section B3 (I and II respectively) of Part III.

B4- PROTECTION

Principle If a decision is taken to proceed with protection by patent filing or some other form of formal IP protection, the process should be carried out using professional assistance as appropriate in a timely manner by the Technology Transfer Office involving the relevant inventors/researchers.

Code Provisions

- Background guidance information on the main types of IP protection, on patent applications in general and on patent costs¹⁰ should be made available to inventors and other staff if required;
- General guidelines and considerations intended for assistance in liaising with an appropriately qualified patent agent and filing a patent application¹¹ should be made available to appropriate staff who are authorised to have such a role;
- Inventors should be made aware that their support and assistance at the various stages of the patenting process including the provision of all necessary information is essential to ensure that patent protection can be obtained;
- Good practice guidelines for assistance in relation to record keeping and laboratory notebooks should be put in place¹²;

- The Technology Transfer Office should formulate an appropriate IP protection strategy to include a choice of territories for filing on a case by case basis. The likely commercial viability of the Relevant IP balanced against the likely IP protection costs should be considered by the Technology Transfer Office before a decision is made.

B5- COMMERCIALISATION

Principle Technology Transfer activities should be pursued in a timely manner through partnership between the Technology Transfer Office and the relevant inventors/researchers and with the industrial/commercial partner as appropriate. In forming the commercialisation strategy, PROs should consider whether commercially viable discoveries can be exploited. In considering the options available PROs should give priority to that strategy which they consider provides most benefit for the Irish economy.

Code Provisions

- Commercialisation activities should recognise specific terms and conditions in appropriate funding contracts;
- In the formulation of strategies for commercialisation, a careful determination of the new technology (product or process) and commercial considerations should take place in partnership with the inventor(s), in a timely manner, in order to help the Technology Transfer Office decide on the most appropriate commercialisation strategy¹³;

10 See Section B4 (I a to d) of Part III.

11 See Section B4 (II) of Part III.

12 Sample guidelines are available at Section B4 (III) of Part III.

13 See additional sample checklist at Section B5 (I) of Part III.

- General procedural guidelines in relation to marketing new opportunities and confidentiality considerations should be developed¹⁴;
- The valuation of early stage IP is very unpredictable. Several factors should be considered in estimating value or potential value, for example:
 - Market valuations – in other words "what is the current market willing to pay?";
 - Third party assistance including for example input from industry and state agencies;
 - Study of comparable existing subject matter, licences and commercialisation practices;
 - Estimating projected sales based on market research;
 - Development stage of the subject matter;
 - Estimated cost of getting to market;
 - Barriers to entry into markets;
 - Estimated cost of patent process.
- Terms used as a basis for negotiation with commercial partners should be formulated in line with the valuation of the IP as outlined above and in accordance with the overall Technology Transfer strategy of the PRO;
- The following commercialisation options¹⁵ should be considered based on the commercial evaluation of the technology and the technology transfer strategy of the PRO, giving consideration to exploitation firstly within Ireland and thereafter the European Economic Area (EEA) and globally, and ensuring always that the option chosen is regarded as the best form of exploitation for the maximum benefit to the Irish economy. As a general rule licensing, rather than assignment of Intellectual Property Rights, should be the preferred route. Assignment of title is an option that should only be considered where the PRO acting through the Technology Transfer Office is of the view that it is an essential element in ensuring the best form of exploitation for the benefit of the Irish economy.
 - *Collaboration with a commercial partner*
This route may be a useful way to carry out further work on a particular process or technology of benefit to both the researcher and the commercial partner.
 - *Commercialisation via one or more established commercial entities*
Depending on the nature of the technology and whether it has multiple uses, a variety of approaches should be assessed to ensure that the discovery is fully exploited. These include non-exclusive, field-exclusive as well as exclusive licensing to suitable existing commercial entities.

14 See Section B5 (II) of Part III.

15 Additional considerations and guidance relevant to each of the commercialisation options listed are shown in Section B5 (III) of Part III.

- *Formation of a start-up company*
Certain technologies are a suitable basis for the formation of a start up company to allow focussed application and development of the technology.
- *The use of patent management companies and/or State Agencies*
IP Management providers are generally prepared to take on a technology audit service with a view to commercialisation in exchange for a first option on owning or exploiting the IP.

B6- MISCELLANEOUS RESEARCH MATERIALS

Principle During Technology Transfer, due consideration should be given to the retention of know-how and research materials for ongoing research purposes and where possible it should be ensured that ongoing access to important know-how is secured for the PRO.

Code Provisions

- When a research material or tool has non-commercial applications as a general research tool as well as commercial application, the PRO should seek to agree a retention of rights in its favour for the ongoing use of the material or tool for research purposes and for other fields of use;
- Exchange of materials between PROs for research purposes should be streamlined in order to minimise impediments to academic research and consideration given to research portals, intranets and other forms of materials exchange;

- PROs should avoid signing agreements as recipients of research material that unduly limits the freedom of researchers to collaborate and publish.

SECTION C - OWNERSHIP

Principle Ownership of Relevant IP should be vested in the PRO. A published ownership policy supported by written agreements should be used to clarify and establish this position.

Code Provisions

- The formulation of procedures and policy relating to ownership of IP should recognise specific terms and conditions in relevant funding contracts;
- Published PRO policy should state clearly that the ownership of Relevant IP shall be vested in the PRO;
- Having regard to the legal position regarding ownership¹⁶, this policy should be supported by appropriate written agreements, acknowledged and agreed to by all individuals involved in research irrespective of their status, including, academic staff, visiting scientists, technicians, research staff, students whether engaged on a temporary and part time basis and it is recommended that procedures should be in place to ensure such contracts are valid and enforceable;

¹⁶ See Section C of Part III for further detail of the Legal Position regarding ownership in relation to patents and other forms of IP.

- Such agreements should contain effective assignment provisions and where appropriate a waiver of moral rights in favour of the PRO to ensure that the PRO will be the owner of the Relevant IP;
- The agreements should also include appropriate confidentiality obligations, (see also Section B2 - Disclosures above). In addition, the agreement should deal with the extent to which the parties can use and exploit the resulting IP (this is also relevant to Section B5 - Commercialisation above). Such agreements reduce the likelihood of disputes arising at a later stage in respect of any of these issues, and also ensure the PRO is in a position to give all warranties which potential licensees or commercialisation partners will seek in respect of the IP;
- In addition, all entities involved in creation of Relevant IP such as companies or other universities carrying out sub-contracted work should also execute written agreements, dealing with the issues outlined above;
- In the event that a person who is or has been engaged in the creation of Relevant IP leaves a PRO to join another research organisation, the PRO should ensure that a written agreement is in place, having regard to the nature of the IP created by that person, setting out the position regarding ownership of the IP and arrangement regarding the delivery over, in whatever form, of that IP.

SECTION D - SHARING OF THE BENEFITS

Principle PROs should publish an incentive policy that clearly explains policy on royalty sharing and equity-based commercialisation income arising from exploitation of Relevant IP including provisions for sharing with inventors. Incentive structures need not be restricted to financial benefits and PROs should also consider other types of benefits.

Code Provisions

- Procedures and policies relating to sharing commercialisation income should recognise specific terms and conditions in relevant funding contracts;
- The PRO should set out the parameters of royalty sharing and other income relating to exploitation of Relevant IP, as far as possible, by way of a standardised approach¹⁷;
- All those primarily responsible for the creation of Relevant IP (*i.e.* the inventors) should benefit from its exploitation. It is important that inventors are clearly defined and identified through the disclosure process as outlined in Section B2;
- Inventors should be made aware that they may be obliged to continue to sign documents related to their inventions as part of their work irrespective of whether they are with an institution or have moved on;

¹⁷ Section D of Part III includes a brief summary of common themes of existing well established incentive schemes used in Ireland and elsewhere;

- Allocating a share of returns to the department/faculty compensates other staff for the indirect contributions they make to generating IP;
- Financial incentives need to meet a number of requirements as a minimum. They should:
 - Include the correct groups *i.e.* the inventors, the department and the PRO;
 - Be clear and publicised;
 - Be fair and treat all inventors in a similar way;
 - Reflect the returns that are generated;
 - Be sufficiently large and timely in order to have an effect on behaviour;
 - Legislate for inter-PRO IP collaboration.
- Other types of benefits (in addition to financial benefits) should be considered including:
 - Support for academic staff engaged in IP commercialisation *e.g.* providing additional time to engage in IP-related activities where there may be scope to relieve staff of particular duties for a specified period of time;
 - Inclusion of IP-related activities as a criterion for career advancement;
- In instances where more than one party has an interest in the IP, for example where inventors originate from separate research institutions, the PRO leading exploitation should take responsibility for revenue sharing of any income generated.

SECTION E - CONFLICTS OF INTEREST

Principle Policy and procedures should be developed and implemented to address conflicts of interest to:

- Help alert staff to recognise areas where conflicts may occur;
- Encourage full disclosure of potential areas of conflict and open discussion with the PRO at an early stage;
- Manage and resolve conflicts where they occur.

Code Provisions

- A policy for the management of conflicts of interest relating to Technology Transfer¹⁸ should be introduced that is consistent with existing general PRO policies;
- In addition, specific funding terms and conditions in funding contracts should also be recognised where relevant;
- The establishment of a Committee on IP Conflicts of Interest may be of use to advise on ambiguous and/or complex situations.

18 See Part III, Section E for extracts from existing general policies.

SECTION F - MONITORING AND EVALUATION

Principle Clear systems for monitoring and evaluation should be developed and implemented as they can strengthen effectiveness of management of IP and Technology Transfer. Routine records of IP management measurement indicators can also:

- Illustrate to external organisations that the PRO is managing IP effectively;
- Identify problems and opportunities relating to IP management and to change budgets and strategies to reflect these changes;
- Be effective in tracking and recording which can be a factor in faculty retention and recruitment.

In recognition of these considerations, appropriate indicators should be designed and collected on an annual basis.

Code Provisions¹⁹

- The collection of indicators should also recognise specific requirements in relevant funding contracts;
- It is generally recognised that most PROs do not usually make significant financial returns from Technology Transfer activities. Therefore statistics collected should be interpreted carefully and designed around the PROs mission relating to Technology Transfer;

- The collection of suitable metrics relating to IP Management and technology transfer activities should be undertaken by the PRO on an annual basis²⁰. Suggested examples of possible indicators are:

- Number of Invention Disclosure Forms;
- Number of patents filed;
- Number of licences or technology transfers involving patents and IP;
- Type of licensee - existing company, (including whether it is indigenous), new or spin-out company;
- Numbers of full time equivalents in Technology Transfer Office;
- Numbers of contacts made and opportunities presented to companies.

- The PRO should also seek to recognise the importance of more general knowledge transfer activities. The design of appropriate indicators is more difficult but they should also align with the technology transfer strategy of the PRO.

19 A number of important general considerations intended to assist in the formulation of the monitoring and evaluation framework are shown in Section F(1) of Part III.

20 For reference purposes, Section F (II) of Part III represents a set of indicators introduced by AUTM.

PART III

IMPLEMENTATION OF THE NATIONAL CODE OF PRACTICE - INCLUDING IP MANAGEMENT
REFERENCE MATERIAL, GOOD PRACTICE PROCEDURAL GUIDELINES, SUGGESTED CHECK-
LISTS AND TEMPLATES

PART III

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PART III

SECTION A - IP MANAGEMENT STRATEGY & IP MANAGEMENT/TECHNOLOGY TRANSFER OFFICE

NOTE ON USEFUL REFERENCES

AUTM and AURIL²¹ have websites and associated publications (as below) that were useful terms of reference in drafting the guidelines contained within the Code of Practice and may also be of general benefit to users of the Code.

1. <http://www.autm.net>

Including the following information available on the site

Under "Policies" sample documents from a number of universities and institutes can be viewed including policies on:

- Intellectual Property;
- Conflicts of Interest;
- Publication.

Under "Agreements" it is possible to view a number of sample technology transfer agreements.

2. <http://www.auril.org.uk>

Including the following publications available on this web-site or via links:

- AURIL Handbook of Intellectual Property Management;
- Theros Intellectual Property Guidelines (www.theros.co.uk);
- AURIL/Universities UK/UK Patent Office "A Guide to Managing Intellectual Property, Strategic Decision Making in Universities".

In addition, there are also a number of other specialised European networks which are further sources of useful information including:

1. ProTon (Public Research Organisations Technology Offices Network-Europe)
www.gate2growth.com/ProTon.asp
2. EARMA (European Association of Research Managers and Administrators) www.earma.org
3. ASTP (Association of European Science and Technology Transfer Professionals),
www.astp.net
4. LES (Licensing Executives Society-Europe including LES- Britain & Ireland)
www.les-europe.org

Other useful references and sources of information are indicated as footnotes within the document.

21 See Abbreviations Section for full titles of these organisations.

SECTION B - IP MANAGEMENT ACTIVITIES AND COMMERCIALISATION

SECTION B2 – DISCLOSURES

SAMPLE INVENTION DISCLOSURE FORM²²

The contents of this form are intended to be employed for guidance purposes only and if used as a template, local language and contact points should be employed and other changes made as appropriate.

The purpose of this form is to record what has been invented together with some background information. There are some pointers towards determination of patentability and also basic information required by the various parties involved in commercialising inventions including Technology Transfer staff, external funding bodies, patent agents, legal advisers, and potential industrial partners.

The form should be completed by the lead scientist and used when something new has been conceived or developed that has possible commercial application.

Principal Investigator(s): []

Research Group: []

Technical Title: []

Date: []

Reference: []

1. Technical Description: []

Note: This should be comprehensive and include how the invention works, describing in detail how to perform the experiments that demonstrate the invention. The description should try to answer the question "what problem does the invention solve". Any drawings, photos or prototypes should also be included.

2. Novelty and Advantages over Existing Technologies: []

Note: This should include why the invention is innovative and not obvious to others, or similar to existing solutions.

Also a description should be made of any existing similar developments or research in the same field. An explanation should be made of the advantages the new invention has over existing similar technology. Include references to publications or patents that you are aware of and consider to be closest to the new invention (including your own).

²² This form was adapted from a form kindly supplied by Medical Research Council Technology , 20 Park Crescent, London W1N 4AB, UK.

3. Potential Commercial Application: []

Note: This should indicate possible commercial applications of the invention, either in the short or long term.

4. Disclosures: []

Note: Valid patent protection depends upon the invention not having been previously disclosed to the public in any way therefore this section should include details on any existing or planned disclosures including:

Abstract, Poster, Paper, Thesis, Media, Lecture/Seminar, Discussion with others outside of the Research Establishment, Internet or Other

5. Material Transfer: []

Note: This should include details of materials obtained from other institutions together with any signed agreement as well as details of materials shared with others.

6. Contributors/Potential Inventors: []

6.1 Contributor/Potential Inventor Information: []

Note: For each contributor/inventor include details on full name, title, all contact information including mail and e-mail addresses, phone and fax numbers, employer, nationality and % contribution to the invention.

Contributor 1 (Lead Inventor): []

Contributor 2: []

Contributor 3: []

Further contributors if appropriate

6.2 Research Funding relating to Contributors/Potential Inventors: []

Note: The research funding relating to each individual contributor should be included, together with the name of the research sponsor (e.g. State Agency, industry, charity or other) and an indication of the period of time that the funding covers.

Contributor 1 (Lead Inventor): []

Contributor 2: []

Further contributors if appropriate

6.3 Contribution to the Invention: []

Note: Each contributor/potential inventor should write a paragraph relating to his/her contribution and include a signature and date at the end of the paragraph. The summary should include whether the individual was for example involved in deciding on a general programme of work or designing particular experiments as well as whether he/she was involved in carrying out experimental work and the extent to which he/she was carrying out other peoples' instructions.

Contributor 1 (Lead Inventor): []

Contributor 2: []

Further contributors if appropriate

6.4 Assessment of Inventors: []

Note for identifying inventors: Inventors are not necessarily those appearing as authors on a scientific publication. Inventors are those who are assessed as having made an intellectual contribution to the invention, rather than those who have carried out technical instructions or supplied materials.

This section should be completed by the lead inventor and should indicate with explanations and with reference to the above statement, which of the contributor(s) above made an intellectual contribution and should therefore be named as inventors.

Contributor 1 (Lead Inventor): []

Contributor 2: []

Further contributors if appropriate

Signature of Lead Inventor: []

Other Signatory as deemed appropriate: []

I - SUGGESTED CHECKLIST OF AREAS TO BE COVERED AT THE DISCLOSURE EVALUATION STAGE

A basic Sample Evaluation Form is shown in B3 II for guidance purposes. The outline of such a form should include evaluation of the following areas:

- Background information such as patent and literature searches already carried out, information on any disclosures to date and information on funding of the research, also the situation with regard to patentibility of the technology;
- Information on the nature of the technology including whether it is highly novel and the ease of reducing the technology to practice;
- Market information including the size of the potential market, whether it is growing and whether there is a clear market need, also the status in relation to competitors;
- An analysis on what commercialisation routes may be possible, what companies may be interested, including existing companies which the inventor may have had interaction with, and also whether there is a clear competitive advantage.

II- SAMPLE DISCLOSURE EVALUATION FORM²³

Project Name

PATENT PROTECTION

IPR, Novelty, Inventive Step, Claims

MARKET SIZE

Customers with money

INVENTOR SUPPORT

Experience, contribution, Enthusiasm

MARKET IMPACT URGENCY

Imminent disclosure?

TIMESCALE

TECHNOLOGY TRANSFER OFFICER

Experience in Field

Additional Information;

Patent Search;

Market Research;

²³ Extracted in part from AURIL Handbook of IP Management;
(<http://www.auril.org.uk>).

I- BACKGROUND INFORMATION ON PATENTS AND OTHER FORMS OF IPR

Note: The information contained in a - d²⁴ below provides brief summaries of the main features of Irish IPR, key features of patents, general stages in a patent application and patent costs respectively and should be used for guidance only. For more comprehensive details, expert advice should be obtained.

a) Main Features of Irish Intellectual Property Rights (IPRs)

	Main Requirements for protection	Registration	Term	Main infringing acts, if committed without consent.
1. Patents (Patents Act, 1992)	<p>Full term patents: Inventions which are new, involve an inventive step, and capable of industrial application.</p> <p>Short term patents: All of the above save that the invention must simply not be clearly lacking in an inventive step.</p>	Yes (note law relating to confidentiality)	<p>Full term patents: 20 years from date of application.</p> <p>Short term patents: 10 years from date of application.</p>	<p>In the main doing any of the following:</p> <ol style="list-style-type: none"> 1. Direct infringement: <ol style="list-style-type: none"> (a) Making, offering, putting on the market, or using a patented product, or importing or stocking the product for those purposes; (b) using a patented process, or (in certain circumstances) offering the patented process for use; (c) offering, putting on the market, using or importing, or stocking for those purposes, the product obtained directly from a patented process. 2. Secondary infringement: <p>Supplying or offering to supply a person with the means for putting into effect an essential element of the patented invention, where they should have known the said means are suitable and intended for putting that invention into effect.</p>

²⁴ General formats for displaying some of this information are based on the Theros IP Guidelines (www.theros.co.uk) and assistance was kindly provided by Tara MacMahon in relation to a).

	Main Requirements for protection	Registration	Term	Main infringing acts, if committed without consent.
2. Copyright (Copyright and Related Rights Act, 2000)	Original literary works (including computer programs and databases), dramatic, musical, artistic works; sound recordings, films, broadcasts, cable programmes, original databases.	No	In the main author's life +70 years. The former 50 year period still applies for some works e.g. sound recordings.	In the main doing any of the following in respect of the work or a substantial part of the work: 1. Primary infringement: (a) Copying; (b) making same available to the public; (c) making an adaptation of the work; (d) doing (a) or (b) in respect of an adaptation; (e) Issuing copies to the public. 2. Secondary Infringement: (a) possessing, importing or dealing in infringing copies; (b) permitting the use of facilities to make infringing copies. © where there is reason to believe that an infringement has taken place.
3. Database right (Copyright and Related Rights Act, 2000)	Databases in respect of which there has been a substantial investment in obtaining, verifying or presenting its contents.	No	15 years from end of calendar year in which the making of the database was completed.	Extracting or re-utilising all or a substantial part of the contents of the database, or authorising same.

	Main Requirements for protection	Registration	Term	Main infringing acts, if committed without consent.
4. Registered Trade Marks* (Trade Marks Act, 1996)	Any distinctive word or sign used in the course of trade which is capable of being represented graphically and capable of distinguishing goods or services of one undertaking from those of another undertaking.	Yes	Indefinite. Renewable every 10 years.	<ol style="list-style-type: none"> 1. Using identical sign in relation to goods or services which are identical to those for which the mark is registered. 2. Either (a) using an identical sign in relation to goods or services which are similar to those for which the mark is registered; or (b) using a similar sign in relation to goods or services which are identical or similar to those for which the mark is registered and there exists a likelihood of confusion on the part of the public. 3. Using an identical or similar mark in relation to dissimilar goods, where such use takes unfair advantage of the registered mark.
5. Unregistered marks (Common Law tort of passing off)	Goodwill and/or reputation in a business and/or unregistered mark.	No	Indefinite, provided goodwill and reputation maintained.	In general, making a misrepresentation. in the course of trade, to prospective customers, which is calculated to injure the business or goodwill of the complainant, and which causes actual damage to the complainant's business or will probably do so.

* It is also possible to obtain registration protection in respect of trade marks under the Community Trade Mark registration system, through OHIM, Alicante, Spain.

	Main Requirements for protection	Registration	Term	Main infringing acts, if committed without consent.
6. Registered Designs** (Industrial Designs Act, 2001)	Aesthetic features of a product. The design must have worldwide novelty and individual character, and where the design is not dictated solely by function.	Yes	25 years maximum, renewable every 5 years.	In the main making, offering, putting on the market, importing or exporting, using or stocking any product for which the design has been registered.
7. Unregistered Design Rights (Community Design Regulations, 2002)	As per registered designs (see above)	No	3 years from the date on which the design was first made available in the EU.	In the main using copies of the original design.
8. Confidential Information (Common law)	The information must have the requisite degree of confidence attached to it.	No	For so long as the information is kept confidential.	Unauthorised disclosure.
9. Topography right (EC (Protection of Topography of Semi-Conductor Products) Regulations, 1988)	<p>(a) the topography of the chip must fall within the definition of "topography" in the legislation, and the product must fall within the definition of "semi-conductor product"; and</p> <p>(b) the topography must be the result of the creator's own intellectual effort, and not be commonplace in the semi-conductor industry; and</p> <p>(c) the creator must satisfy the nationality test set out in the legislation.</p>	No	In general, 10 years from when the topography is first fixed or encoded.	<p>(a) Reproducing a topography; or</p> <p>(b) commercially exploiting or importing for that purpose, a topography, or of a semi-conductor product manufactured by using the topography.</p>

** It is also possible to obtain registration protection in respect of designs under the Registered Community Design registration system, through OHIM, Alicante, Spain.

I- BACKGROUND INFORMATION ON PATENTS AND OTHER FORMS OF IPR (cont.)

Reminder: This information is for guidance only. For more comprehensive details, expert advice should be obtained

b) Patents – Key Information

Patents protect technical innovation and involve a formal process for application.

A patent is a legal title granted by the state to its holder which provides the exclusive right to make use of an invention for a limited time on a territorial basis by preventing others from, amongst other things, making, using or selling it without the permission of the patent-holder.

There are three basic criteria for patentability

The innovation must be novel, that is, not part of existing knowledge in the area;

It must involve an inventive step that would not be obvious to someone generally familiar with the area of work; and finally, it must be capable of industrial application.

Novelty is judged at the priority date, that is the date of first filing at a Patent Office.

To be patentable the innovation must not have had prior public disclosure, that is, a Patent Application must be filed before any non-confidential disclosure.

An initial or preliminary patent application establishes a priority date. Patent applicants have up to 12 months from the priority date to decide on whether to apply for protection in other countries. Additional information and data can be added to the specification at that time, provided it has not been made public and does not extend the scope of the application as filed. [If there is a significant improvement/development made after an initial preliminary application get advice.] In some cases a further preliminary patent application may be appropriate.

A compatible balance can be achieved between filing a patent application and publishing the technical innovation IF MANAGED CORRECTLY.

An alternative to patenting may be keeping the innovation confidential.

A Patent Application requires full technical disclosure and the eventual publication of information.

Patentability is a complex area – expert advice is essential.

I- BACKGROUND INFORMATION ON PATENTS AND OTHER FORMS OF IPR (cont.)

c) General Stages in a Patent Application

Important note: The following information in relation to timescale and activity is provided for guidance only. The precise timescale will be dependent on the route chosen. The timing above is an estimation of times based on using the Patent Cooperation Treaty route. The European Patent Office or National patenting routes can also be used and timings will differ. For more comprehensive details, expert advice should be obtained.

TIMESCALE	ACTIVITY
0	Patent Application filed in Ireland or other territory as appropriate. The initial or preliminary patent application establishes a priority date.
During 1st year	Patent applicants have up to 12 months from the priority date to decide on whether to apply for protection in other countries. Additional information and data can be added to the specification at that time, provided it has not been made public and does not extend the scope of the application as filed. If there is a significant improvement/development made after an initial preliminary application advice should be sought. In some cases a further preliminary patent application may be appropriate.
1 year	Application may be filed as an international application under the Patent Cooperation Treaty (PCT) – no further information can be added (<i>except in the US where slightly different rules apply</i>).
1 year 6 months	Application published with Search Report (at this stage anyone can obtain copies of the Patent specification). In the case of an international application, the Search Report may be followed by an International Preliminary Examination.
2 to 5 years	International applications are then "nationalised" which means they are transferred to the national patent offices of the states in which protection is required. Examination report is then received, Patent Attorney and Examiner correspond and negotiate on wording of Patent claims – timing will vary depending on country.
3 to 7 years (typically)	Patent granted (or refused).
4 to 20 years	Annual renewal fees due.

I- BACKGROUND INFORMATION ON PATENTS AND OTHER FORMS OF IPR (cont.)

d) Approximations of Patent Costs²⁵

Reminder: This information is for guidance only. For more comprehensive details, expert advice should be obtained.

Note: It is not possible to give an accurate estimate of the costs involved in filing and prosecuting a patent application from filing through to grant as a large number of factors determine the ultimate costs. The most important factors are the:

- complexity of the invention (which will principally determine the initial patent specification drafting costs);
- length of the patent specification (which has a significant influence on translation costs);
- relevance of cited prior art, which will have a significant impact on the prosecution costs of the patent applications(s);
- It should be noted that other factors also apply.

Given the above caveats, approximate costs would be as follows (excluding VAT):

1. Cost of filing initial Irish patent application: EURO 1500.00 – EURO 12000.00
- Of which Official Fees: EURO 60.00/EURO 125.00
2. PCT application claiming priority from above application: EURO 9500.00 – EURO 10000.00
- Of which Official Fees: EURO 3000.00
3. International Preliminary Examination (optional): EURO 3000.00
- Of which Official Fees: EURO 1530.00
4. Dealing with Written Opinion issued following International Preliminary Examination(optional): EURO 2000.00
- Of which Official Fees: None

²⁵ This information was kindly provided by Murgitroyd & Company, European Patent and Trade Mark Attorneys.

d) Approximations of Patent Costs (cont.)

Regional/National Phase filings post-PCT International Phase

5. Entry into European Regional Phase: EURO 5500.00
 - Of which Official Fees: EURO 2000.00
6. Entry into National Phase in English speaking country:
 - US: EURO 4000.00
 - Other: EURO 3000.00
 - Of which Official Fees Varies according to country
7. Entry into National Phase in non-English speaking country: EURO 5000.00 upwards (Costs vary widely according to country with, for example, Japan being one of the most expensive).
 - Of which Official Fees: Varies according to country.
8. Prosecution costs in each of the above countries:

Prosecution costs will vary from country to country. However, as a general rule, it can be assumed that the prosecution costs will be at least equivalent to the filing costs in each country.

 - Of which Official Fees: Generally only where extensions of time required.
9. Grant/Printing/Translation Costs following allowance of European Patent
 - Application: Will vary according to number and language of countries.

Note: It is difficult to be specific due to the large number of variables, however, a figure that is often quoted is that costs of upwards of approximately EURO 150,000.00 over the first five years would typically be incurred in securing grant of patents in the major industrialised countries of the world.

It should also be noted that the above costs exclude post-grant costs e.g. European opposition costs and renewal fees.

Overall costs can be reduced where the PCT route is not followed e.g. national applications are filed directly claiming priority from the Irish application.

It should also be noted that national patenting costs outside Ireland e.g. US etc. include Irish and local attorney costs - the official fee components of these costs would be small and, unlike official fees paid to the Irish Patents Office, would be subject to VAT.

II- PATENT PROTECTION PROCEDURES²⁶

The following guidelines are intended to provide assistance when the decision has been taken that patent filing should go ahead:

- The responsible person in the Technology Transfer Office should contact a suitable Patent Agent in preparation for filing of a new patent application. A meeting with the Patent Agent and the inventors may be the next best step. Discussions at the meeting should ensure that the key points below are addressed:
 - Enough information is provided to the Patent Agent;
 - Commercial applications and claims can be drafted;
 - The Patent Application is dealt with as cost effectively as possible.
- Information that has been collected in the Invention Disclosure and Disclosure Evaluation Forms will be extremely valuable at this stage in helping to establish patentability. Additional information may include:

Listing as many ways as possible of:

 - Putting the discovery into practice;
 - Using for commercial gain;
 - Improving on the original discovery.
- A Patent Agent will usually be familiar with and have some knowledge of the inventors' field of study but may not know the defined area in detail therefore:
 - Inventors may need to explain the invention at a fairly basic level;
 - The meeting should not only address the "preferred embodiment" of the invention but should consider all possible embodiments;
 - Any existing physical embodiments should be supplied along with any research papers in draft form etc.
- Actions by the Patent Agent as a result of the meeting may follow one of the lines below:
 - A recommendation that further research or proof of concept work is carried out for review at a particular time-point. In this case confidentiality will need to be maintained. This may not be possible if the researcher wishes to disclose the existing data before the agreed time-point. The Technology Transfer Officer will need to make a decision on filing in discussion with the inventors based on the existing data;
 - Preparation of a draft Patent application for review by the Technology Transfer Officer and the inventor;
 - A preparation of an informal patent application based on papers provided by the inventor. This may be helpful if a disclosure is planned and time is short or if cost is an issue.

²⁶ Adapted from AURIL Handbook of IP Management; (<http://www.auril.org.uk>).

III- RECORD KEEPING

The following considerations and guidelines for record keeping should apply²⁷:

- It is essential to keep thorough records of experimental work as part of undertaking good research practice and also for IP purposes;
- At a future date it may be necessary to return to notebooks to prove the date of an invention and its reduction to practice;
- In cases of opposition to patent applications (European) and in litigation (USA) laboratory notebooks may be required to be presented as legal evidence. This is likely to occur many years after the Patent application was filed therefore notebooks should be stored and filed carefully and left with a designated person after an inventor leaves the PRO;
- Permanent bindings should be used on notebooks and loose-leaf books should be avoided to prevent possible removal or substitution of pages;
- A consecutive record of the work undertaken should be provided and pages in notebooks should be numbered;
- Any additional drawings, charts or computer printouts should be permanently attached to the notebook, clearly identified and have reference made to them in the notebook. Other records that cannot be attached to the notebook should be retained in a separate ring binder and cross-referenced. Electronic data should be cross-referenced and a hard copy supplied where possible. Duplicate copies should be made and backed up regularly;
- Blank pages or parts of pages should be scored through;
- All project related or other activities such as breaks in research for various reasons including holidays etc. should be recorded, signed and dated;
- The notebook should be reviewed regularly by someone who understands the work but who is unlikely to be an inventor on any patents that could arise. Ideally this witness should sign and date each page. The witness should also sign and date any graph, charts or print-outs that are inserted into the laboratory notebook;
- The information in the notebooks should be complete enough to enable one skilled in the art to understand and carry out the experimentation.

²⁷ Adapted from AURIL Handbook of IP Management; (<http://www.auril.org.uk>).

I - CHECKLIST FOR FURTHER COMMERCIAL EVALUATION

Additional questions at this stage should expand on the existing collected information. An additional example checklist for further evaluation at this stage is shown below.

Technology Questions

- Can the technology be applied to different problems in differing fields i.e. is it a 'platform technology'?
- Is the technology very novel?
- Is the technology very complicated or relatively straightforward in its application?
- Has it been shown to work in practice?
- What is the stage of development or maturity of the technology?

Commercial Questions

- Is the technology only applicable to a relatively small market?
- Is the market currently in need of new products or processes or are there existing good, well known, products?
- Are there obvious potential licensees operating in Ireland? Outside Ireland?
- Will the technology provide a commercial advantage to a licensee?
- Would an industrial sponsor be interested in being involved in development?

- Is the technology suited to and best exploited by the formation of a company?

II- GENERAL PROCEDURAL GUIDELINES RELATING TO MARKETING NEW OPPORTUNITIES AND CONFIDENTIALITY ISSUES

- PROs should consider "showcasing" of opportunities for commercialisation on appropriate web-sites or via other mechanisms. A short non-confidential disclosure document may be appropriate for each available technology outlining the basics of the technology, the IP position, the potential commercial applicability of the particular invention and the appropriate Technology Transfer Office contact person.
- Marketing of the technology to potentially interested commercial partners should also be carried out in a focussed way where appropriate using knowledge of the particular field.
- Prior to disclosing any further information to third parties, a Confidentiality Agreement should be put in place. Any agreement should deal with the following matters as a minimum:
 - Identification of the parties;
 - The information that is to be kept confidential; and
 - The time period for confidentiality.

III - FURTHER CONSIDERATIONS AND GUIDANCE RELATING TO OPTIONS FOR COMMERCIALISATION

Collaboration with a commercial partner.

This route may be a useful way to carry out further work on a particular process or technology of benefit to both the researcher and the commercial partner. A collaboration agreement would be expected to include:

- An agreed research schedule and level of funding;
- A fixed maximum time delay on publication;
- Agreed ownership of background and foreground IP, and, where appropriate, provisions dealing with the cross-licensing of same (see section below on "licensing of technology");
- Where appropriate a defined (a) field of use and (b) territory, where the parties can exploit the foreground IP;
- Possible future licensing terms dealing with any further improvements made to the foreground IP;
- Extent to which the parties can assign, sub-licence or sub-contract their rights or obligations under the agreement;
- Confidentiality obligations;
- Warranties and indemnities; limitation of liability;
- Governing law; jurisdiction; dispute resolution.

Licensing of the technology to one or more established commercial entities

Examples of the types of provisions a licence agreement would be expected to include are:

- Description of IP being licensed;
- Definition of the scope of the rights granted under the licence e.g. whether the rights are exclusive or non-exclusive; and (a) the field of use and (b) the territory where the rights can be exploited, if appropriate;
- A reservation of the right of the PRO to use the IP in academic research and to benefit from any further developments;
- Commercially acceptable consideration for the licence for example, up-front payment, milestone payment and royalties and the basis for calculating royalties;
- Suitable reporting requirements for the licensee;
- The term of the licence and the conditions under which the licence can be terminated;
- Responsibility for future patent prosecution and otherwise protecting the IPR;
- Whether the licensee has a right to assign, sub-licence and/or sub-contract the rights or obligations granted under the agreement;
- Confidentiality obligations;
- Ownership of improvements to the licensed technology;
- Warranties and indemnities; limitation of liability;
- Governing law; jurisdiction; dispute resolution.

Licensing in the context of forming a start-up company

Several initial factors will influence whether this is the preferred route including the:

- Suitability of the technology;
- The IP position relative to competitors;
- Desired level of involvement of the inventor(s);
- The ability to interest suitable investors and the preparation of a credible business plan;
- Availability of suitable space;
- The experience and commitment of the management team.

The formation of a start-up company will involve a licence agreement between the PRO and the company. The agreement would be expected to contain provisions included under the Licensing option above.

Assignment of Title

As a reminder, the following provision appears in Section B5 of Part II of the Code

- In considering arrangements in relation to title to a technology or intellectual property with a commercial partner, licensing should be the preferred route. Assignment of title is an option that should only be considered where the PRO acting through the Technology Transfer Office is of the view that it is an essential element in ensuring the best form of exploitation for the benefit of the Irish economy.

In making assignment of title to intellectual property, the PRO should ensure it complies with any applicable funding grant conditions.

Implications of assignment should be evaluated carefully and any agreement entered into should ensure that the PRO is able to and does retain the right to use intellectual property that has been assigned for the purposes of further research.

The use of patent management companies and/or state agencies²⁸

There are certain advantages to the use of patent management companies as a route for commercialisation:

- services are usually provided without upfront costs;
- some companies can also bring investment funds and company management expertise;
- the volume of deals may be higher than if the PRO was depending on in-house resources.

The following issues should also be considered:

- If and when deals are made, lower returns may be received from the IP management company than if the IP was offered on the open market;
- PROs will always need in-house expertise in IP Management in order to act as an intelligent buyer and to monitor performance;
- Due diligence activities relating to the use of IP needs to be performed carefully in order that the PRO is not exposed to significant risks, therefore it may be wise to have in-house control over these activities;
- The IP awareness and education role relating to IP issues may be more effectively managed by Technology Transfer Officers that are seen as part of the PRO.

²⁸ Adapted from AURIL/Universities UK/UK Patent Office "A Guide to Managing Intellectual Property, Strategic Decision Making in Universities.

SUMMARY OF THE LEGAL POSITION IN IRELAND

The Irish legal position on the ownership of the various IPRs is governed by both legislation and common law.

For this reason and due to the fact that legislative default provisions that favour the employer apply only in relation to some forms of intellectual property, the most effective way to ensure that ownership of intellectual property is secured, is to have in place enforceable contracts with those involved in the creation of Relevant IP.

Patents²⁹

The proprietor of a patent is the person to whom the patent is granted. This is distinct from the inventor who is the actual deviser of an invention. The inventor and the patent proprietor are not necessarily one and the same. However the inventor has the right to be mentioned as the inventor in any specification of a patent granted for the invention and in the published patent application.

The position as outlined above is a general summary only. The ownership position in relation to IP can be varied by way of contractual agreement (in the form of an assignment of rights). If an inventor is an employee, the right to a patent is determined in accordance with common law rules. In other words there are no provisions under the Irish patents legislation setting out the parameters of the right to a patent between an employer and an employee, nor is there any statutory entitlement for an employee to compensation in respect of inventions created by him or her. Therefore an invention made by an employee belongs to an employer where:

1. It was made in the course of his normal duties of the employee or in the course of duties falling outside his duties but specifically assigned to him, and the circumstances in either case were such that an invention might reasonably be expected to result from the carrying on of his duties; or
2. The invention was made in the course of the duties of the employee and at the time of making the invention, because of the nature of the duties and the particular responsibilities arising from the nature of his duties, he had a special obligation to further the interests of the employer's undertaking.

The question of whether an individual has created the IP in the course of his employment is a question of fact in each case, and depends on the circumstances of each case. Also, the question of whether an individual is in fact an employee or a consultant is also a question of fact in each case, and the label which the parties put on the relationship is irrelevant in determining whether an individual is a consultant or an employee.

From the above, it can be seen that the position with respect to the ownership of IP depends on the nature of the IP and the circumstances of each individual case. In the absence of well-drafted contractual agreements, the issues can be complex and can very often be unclear. In addition, if any IP was created outside Ireland and/or under a contract governed by laws other than Irish law, then the position as to ownership of the IP may be significantly different and would require even closer examination.

²⁹ Assistance in summarising this information was provided by Tara MacMahon and Arthur Cox.

SUMMARY OF THE LEGAL POSITION IN IRELAND (cont'd)

Copyright

Copyright does not extend to the ideas and principles which underlie any element of a work, but instead relates to the expression of such ideas. The individual who created the work (for example the author) is the first owner of the copyright, save that where the individual creates the work in the course of his employment, the first owner of the copyright is the individual's employer. Relevant to copyright works are moral rights. These are a distinct form of right, which attach to the individual rather than to the work. They cannot be transferred under Irish law and therefore it is essential that these be waived in accordance with the formalities set down by law.

Database Rights

The individual or individuals who make the database will generally be regarded as the owner of the rights in the database. In certain circumstances the person who has invested in the making of the database will also have certain rights, this is known as a *sui generis* right. Ownership can extend to ownership of the constituent parts of the database or to the database as a whole. Again where the individual creates the work in the course of his employment, the first owner of the right is the individual's employer.

Designs

The author of a design shall be treated as the first owner of the design unless the design is created by an employee in the course of employment, in which case the employer is the first owner of the design, subject to any agreement to the contrary. A design that is new

and has individual character shall be registerable, provided the applicant for registration is the owner of the design.

Where the first owner of a design is not the author of the design, the author shall have the right to be cited as the author in the application for registration and in the Register.

In relation to computer generated designs "computer-generated" means that the design is generated by computer in circumstances where the author of the design is not an individual. In the case of a design which is computer-generated, "author" means the person by whom the arrangements necessary for the creation of the design are undertaken.

Trade Marks (Registered)

Ownership of trade marks (in their registered form) arises upon grant to an applicant of a Certificate of registration from the relevant trade marks register. Such certificate will only be granted where the application has successfully progressed through the various tests that are laid down by law.

Trade Marks (Unregistered)

Rights can arise under common law in trade marks that have not been registered but have been used to the extent that the use has led to reputation or goodwill in the relevant mark. This form of trade mark is not as strong as a registered trade mark. Infringement of an unregistered trade mark is actionable through the common law remedy of passing off.

SECTION D - SHARING OF THE BENEFITS

COMMON THEMES

To summarise common themes of existing well established incentive schemes used in Ireland and elsewhere:

- Formula based approaches where income is split three-ways between the research organisation, the department and the individual inventor(s) are very common and an effective way of providing incentives;
- In most cases, rewards are made after deduction of the costs of patenting enabling the research organisation to recoup its expenses and provide continuing support to its Technology Transfer Office;
- The share allocated to the inventor falls and that retained by the university increases, as net returns increase.

SECTION E – CONFLICTS OF INTEREST

EXAMPLES OF EXISTING POLICIES

Examples of US published conflicts of interest policies can be viewed on the AUTM website; (www.autm.net)

Other information on existing policies

General Definition of Conflict of Interest is common in existing policies, for example:

The policy of the National Institute of Health in the US identifies a conflict of interest in general as "any action or decision in which an employee is substantially involved that will have a direct and predictable effect on a financial interest of the employee, spouse, minor child, or organisation in which the employee serves as an officer, trustee, partner or employee".

Example Statement of Policy

A clear over-arching statement is common to a number of existing policies outside Ireland and an example of such a statement is extracted below:

"It is the policy of the Institute that its officers, faculty, staff, and others acting on its behalf have the obligation to avoid ethical, legal, financial, or other conflicts of interest and to ensure that their activities and interests do not conflict with their obligations to the Institute or its welfare³⁰.

30 This information is excerpted from the AUTM Technology Transfer Practice Manual™. © The Association of University Technology Managers®, 2002. All rights reserved.

I- CONSIDERATIONS RELEVANT TO THE MONITORING AND EVALUATION FRAMEWORK³¹

The following considerations should be borne in mind when the monitoring and evaluating framework is being developed:

- There are long time spans between costs being incurred and revenues being received therefore financial performance should recognise that costs and revenues are not linked;
 - There is usually little control over the relationship between IP management costs and revenues. Because costs and revenues are not strongly linked, the measurement and evaluation of performance should also not be linked;
 - Significant financial returns can be achieved but they are very difficult to anticipate. As a result, efficient IP management should be concerned with seeking to increase the possibility that unexpected high returns may occur and not with setting targets for financial returns and judging performance against these targets;
 - Calculations that relate research spending to outputs such as patents and licence revenue should be used with care for a number of reasons, such as the differences between individual fields of research and the likelihood of generating commercialisable discoveries;
- Costs associated with operating the Technology Transfer Office can usually be identified. Again care should be used in comparing these costs with the revenue generated as:
 - Direct IP management costs may be underestimated given that they should also include costs associated with researcher time spent on these activities and the costs of PRO facilities in the development of IP;
 - The costs incurred in strengthening the IP management activity in a particular year will not relate to the revenues received in that year; and
 - Revenues from IP management will not be relevant solely to income from commercialisation. In some cases, a licence or option to a licence may result in funds for a collaboration or contract research with a commercial organisation.

31 Adapted from AURIL/Universities UK/UK Patent Office, "A Guide to Managing Intellectual Property, Strategic Decision Making in Universities".

SECTION F - MONITORING AND EVALUATION (cont.)

II- SET OF INDICATORS INTRODUCED BY THE AMERICAN ASSOCIATION OF UNIVERSITY TECHNOLOGY MANAGERS³²

LICENSING AND OTHER FTEs

- Licensing Full-Time-Equivalents employed in technology transfer office (n)
- Other Full-Time-Equivalents in technology transfer offices (n)

RESEARCH EXPENDITURES

- Total Research Expenditures (\$)
- Federal Government Research Expenditure (\$)
- Research Expenditure from Industrial Sources (\$)

LICENCE/OPTION AGREEMENTS

- Total licences/options executed
- Of above, number of exclusive (n) and non-exclusive (n)
- Licences/options including equity (n)
- Licences/options active cumulative to end of survey year (n)
- Licences/options executed to start-ups (n)
- Of licences/options executed to start ups: number of exclusive (n) and non-exclusive (n)
- Licences & options executed to small companies (n)

- Of licences & options executed to small companies: number of exclusive (n) and non-exclusive (n)
- Licences & options executed to large companies (n)
- Of licences & options executed to large companies: number of exclusive (n) and non-exclusive (n)

RESEARCH FUNDING RELATED TO LICENSES/OPTIONS

- Research funding relating to license/option agreements (\$)

LICENSE INCOME

- Total number of licences/options yielding licence income (n)
- Licences/options yielding running royalties (n)
- Licences/options yielding more than \$1 million in income (n)
- Total licence income received (\$)
- Of licence income received: amount attributed to running royalties (\$)
- Of licence income received (\$):amount attributed to cashed in equity
- Licence income received: all other types (\$)
- Licence income paid to other institutions (\$)

³² This information is excerpted from the AUTM Licensing Survey FY 2002. ©The Association of University Technology Managers®, 2002. All rights reserved.

SECTION F - MONITORING AND EVALUATION (cont.)

LEGAL FEES – EXPENDITURES AND REIMBURSEMENTS

- Amount spent in legal fees for patents and/or copyrights (\$)
- Amount reimbursed by licensees (\$)

PATENT RELATED ACTIVITY

- Invention disclosures received (n)
- Total US patent applications filed (n)
- New US patent applications filed (n)
- US patents issued (n)

START-UP COMPANIES

- Number of start-up companies formed that were dependent upon the licensing of your institution's technology for initiation (n)
- Number of these that have their primary place of business operating in your home state (n)
- Number of start-up companies that were dependent upon the licensing of your institution's technology for initiation and were reported in the survey this year or in earlier years that became non-operational in the fiscal year (n)

- Number of start-up companies that were dependent upon the licensing of your institution's technology for initiation and were reported in the survey this year or in earlier years that were operational as of the last day of the fiscal year (n)
- Of start-up companies formed, number in which equity is held (n)

LICENSED TECHNOLOGIES, POST-LICENSING ACTIVITY

- Number of licensed technologies that became available for consumer (public) or commercial use in the fiscal year (n)
(n=number)

APPENDICES

Irish Council for Science, Technology and Innovation (ICSTI) Membership

Dr. Edward M. Walsh (Chairman)	President Emeritus	University of Limerick
Ms. Sharon Bannerton	Director	Clear Solutions
Dr. Leonora Bishop		Independent Consultant
Ms. Catherine Caulfield	Chief Executive	Biological Laboratories Europe Ltd.
Ms. Marion Coy	Director	Galway-Mayo Institute of Technology
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Ms. Mary Cryan	Director	Cryan Associates
Prof. Donald Fitzmaurice	Chemistry Department	University College Dublin
Dr. Peter Heffernan	Chief Executive	Marine Institute
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Dr. David Melody	Vice President for R&D	Loctite (Ireland) Ltd.
Dr. Pierre Meulien	Chief Executive	Dublin Molecular Medicine Centre
Dr. Pat Morgan	Dean, Faculty of Science	National University of Ireland, Galway
Ms. Ann Murphy	Mathematics Dept.	Dublin Institute of Technology
Dr. Mike Peirce	Chairman	Mentec Ltd.
Dr. Ena Prosser	Director	Enterprise Ireland, Biotechnolgy Directorate
Prof. William J Reville	Biochemistry Dept.	University College Cork
Prof. James A. Slevin	Science Secretary	Royal Irish Academy
Dr. Don Thornhill	Chairman	Higher Education Authority

Task Force Membership

Members:

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Dr. David Melody	ICSTI
Ms. Angela Kennedy	ICSTI
Dr. Leonora Bishop	ICSTI
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Dr. Pierre Meulien	ICSTI
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ACT Venture capital
Arthur Cox
Beaumont Hospital
Biotrin
Celtic Catalysts
Circa Group
Crisis Pregnancy Agency
Conference of Heads of Irish Universities
Council of Directors of Institutes of Technology
Davy Equity Research
Delta Partners
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Education Research Centre - St Vincent's Hospital
Elan
Enterprise Ireland
Executive Venture Partners (EVP)
Geological Survey of Ireland
Growcorp Group
Haughton Institute for Postgraduate Education & Training
Health Research Board
Higher Education Authority
IDA Ireland
Industrial Research Development Group
Institutes of Technology: Athlone; Blanchardstown; Dundalk; Galway; Mayo; Letterkenny; Tallaght.
Irish Bioindustry Association
Irish Bioventures
Irish Business and Employers Confederation
Irish Research Council for Humanities and Social Sciences
Irish Research Council for Science, Engineering and Technology
Irish Venture Capital Association
Marine Institute
Materials Ireland
Megazyme International Ireland Ltd
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NCB Ventures
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Science Foundation Ireland
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Tridelta Ltd.
Trinity College Dublin
Trinity Venture Capital
University College Dublin
University College Cork
University of Limerick
4th Level Ventures

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ICSTI Statements 1997-2004*

Title of Statement	Date of Publication
National Code of Practice for Intellectual Property from Publicly Funded Research	Jan 2004
Nanotechnology	Jan 2004
EU Debate on the Role of Fundamental Research	Nov 2003
A Comparison of Starting Salaries for Science Graduates and Engineers	Aug 2003
State Funding Priorities for 2004	July 2003
Utilising Intellectual Property for Competitive Advantage	Feb 2003
Embedding the PharmaChem Industry in Ireland	Feb 2003
Design and Development	Sept 2002
Measuring and Evaluating Research	Aug 2002
Report on Biotechnology	Feb 2002
Commercialisation of Publicly Funded Research	Feb 2001
Benchmarking School Science, Technology and Mathematics Education in Ireland Against International Good Practice	Feb 2000
Science in Second Level Schools	Nov 1999
Public Sector Research and Technology Services for Innovation in Enterprises	Sept 1999
Technology Foresight Ireland	April 1999
Investing in Research, Technology and Innovation (RTI) in the Period 2000 to 2006	Mar 1999
State Expenditure Priorities for 1999	Nov 1998
Science Technology and Innovation Culture	Nov 1998
Innovation in Enterprises in Ireland	July 1998
Mechanisms for Prioritisation of State Expenditures on Science and Technology	June 1998
Science in Primary Schools	May 1998
A Partnership Approach to Research Funding – The Need for a National Science and Engineering Board	May 1998
£250 million Scientific and Technological Education (Investment) Fund	Jan 1998
State Expenditure Priorities for 1998	Sept 1997

* A CD of ICSTI statements published between 1999 and 2001 is available from the ICSTI Secretariat.

ICSTI Secretariat

The ICSTI Secretariat is provided by Forfás, the national policy and advisory board for enterprise, trade, science, technology and innovation.

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