Fusion for Energy

Industrial Policy Paper

2nd IP Associations Network Meeting

Barcelona 23th September 2011

The Industrial Policy Paper

Why?: Article 6(3)(p) of the F4E Statutes establishes that "*The (F4E) Governing Board shall in particular … adopt rules on industrial policy, intellectual property rights and the dissemination of information in agreement with the Commission*". (O.J. L 90, 30.03.2007, p. 58.)

What?: Principal Aims:

- to obtain best value from industry for the European contribution to the ITER programme;
- to foster mutually beneficial relationships between F4E and its Suppliers for the provision of European in kind contributions to the ITER project;
- to create the foundations for a strong and competitive European fusion industry that provides long-term economic benefits for Europe.

Who?: Proposal F4E (in consultation with Commission) and adoption by the Governing Board (during the next meeting in November 2011).

How?: Implementation as proposed in the document, revision of the implementation every 3 years by the Governing Board

Structure of the document

Structure of the document

- Delivering the European contributions to ITER and the Broader Approach within the agreed budget and schedule (Annex 1);
- Making best use of the industrial and research potential and capabilities of all F4E Members (Annex 2);
- Broadening the European industrial base for fusion technology including SMEs (Annex 3);
- **Fostering innovation and competitiveness for the long-term development of fusion as a future energy source (Annex 4).**
- **Management of Intellectual Property and the Dissemination of Information(Annex 5) .**

Structure of the IP Annex

A. Integrating Intellectual Property into F4E's overall strategy

B. Developing a common understanding of F4E Intellectual Property rules.

C. F4E Intellectual Property terms and conditions

D. Facilitating the practical implementation of Intellectual Property Policy

A. Integrating Intellectual Property into F4E's overall strategy

- Integrating Intellectual Property at the source of the decision making process to ensure a coherent F4E IP and procurement strategy.
- Making use of the management of Intellectual Property assets within F4E's contracts to further the objectives of the organization (e.g. by ensuring the value for money in contracts, avoiding the abuse of monopoly situations, provide for technology transfer…).

IP →An instrument to attain our objectives

- Setting up a protocol to identify those actions that may have particular relevance for Intellectual Property. The early identification of potential hurdles should permit F4E and its contractors to address critical issues well in advance.

B. Developing a common understanding of F4E Intellectual Property rules.

Reinforcing the awareness of our contractors to Intellectual Property through the:

- Implementation of a partnership with the IPR Helpdesk (www.iprhelpdesk.eu) to provide for a privileged channel for SMEs to Intellectual Property information related with fusion activities.
- Providing e-Learning for training on specific F4E Intellectual Property related issues
- Providing a site devoted to Intellectual Property issues within F4E's web page. The site may include, inter alia, a "Frequently Asked Questions" section summarizing the most relevant Intellectual Property questions raised by our contractors, model clauses and detailed information about F4E's procedures related to Intellectual Property.

C. F4E Intellectual Property terms and conditions

- Providing ownership conditions of results generated (i.e. *Foreground*) in the contracts carried out for F4E to facilitate the exploitation of such results by those which have generated them.
- Emphasizing the need to protect generated results as Intellectual Property Rights (e.g. patents) where possible to facilitate technology transfer and commercial exploitation of such results.
- Providing relevant IP clauses to address the specific needs of the different contracts placed by F4E [e.g. ad hoc clauses for R&D (including feasibility studies, pre-design, design, preparatory work for establishing technical specifications), manufacture of mock-up/prototypes, series production, supply of off-the-shelf products, supply of raw material].
- Guaranteeing that F4E retains sufficient rights to background and foreground for it to fulfil its obligations in relation to EURATOM, IO and Broader Approach.

D. Facilitating the practical implementation of IP policy

- Creating value by implementing optimal strategies for the protection or exploitation of the Intellectual Property assets resulting from a contract.
- Providing "Clearing reports" on obstacles for the manufacturing or commercializing of a product within a particular territory with the objective to avoid the infringement of third party rights. Such reports may help to diminish the risks for both F4E and its partners when implementing F4E's contracts.
- Setting up of model license agreements and joint-ownership agreements to facilitate the management of the Intellectual Property assets after the finalization of the contracts.
- Provide for electronic tools to facilitate the management of Intellectual Property related forms (i.e. Background, Foreground, Publication forms).
- Operation of a database with data from F4E and Euratom contractors in the form of intellectual property rights and scientific publications for effective management of IPR.

Thanks

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Patents vs. Know-how

Antoni López-Carrasco Comajuncosas,
Oficina Ponti

Know-how and trade secrets

- Trade secrets are not generally known to the public

- Trade secrets must have a economic value

- Reasonable efforts are made to keep secrets confidential

Trade secret enforcement

- Contractual agreements with employees (labour law), e.g. confidentiality clauses and non compete agreements

- No international standards are yet widely accepted: anti-trust, unfair competition law (civil law)

- Criminal prosecution: misappropriation

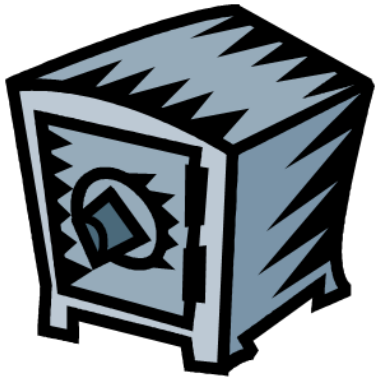
Enforcement

- Example: A former employee pleaded guilty to copying roughly 100 USD worth of trade secrets on an external hard drive before relocating to work for a competitor automobile manufacturer in the Far East.

- The defendant faces a fine of up to 150 000 USD and 5-7 year in prison (US vs. Yu, No 9 Crim 20304).

Know how checklist

- Does the secret provide a competitive advantage ?
- How rapidly is the market changing ?
- Are others likely to arrive at the same idea ?
- Is reverse engineering a problem ?



Example: when is know-how better ?

- technology is directed to a manufacturing process and
- reverse engineering is difficult and
- products have short life cycles

Know-how: the trouble

- Are protocols for identifying know-how in place?
- Are measures taken to prevent former employees from revealing know-how?
- And associates, interns, scholars, joint venture staff, open innovation ?

Know-how: the trouble

- Example: Third party independently discovers and patents our proprietary trade secret

- Remedy: exception, company may continue commercial activities, but it may not enlarge operations

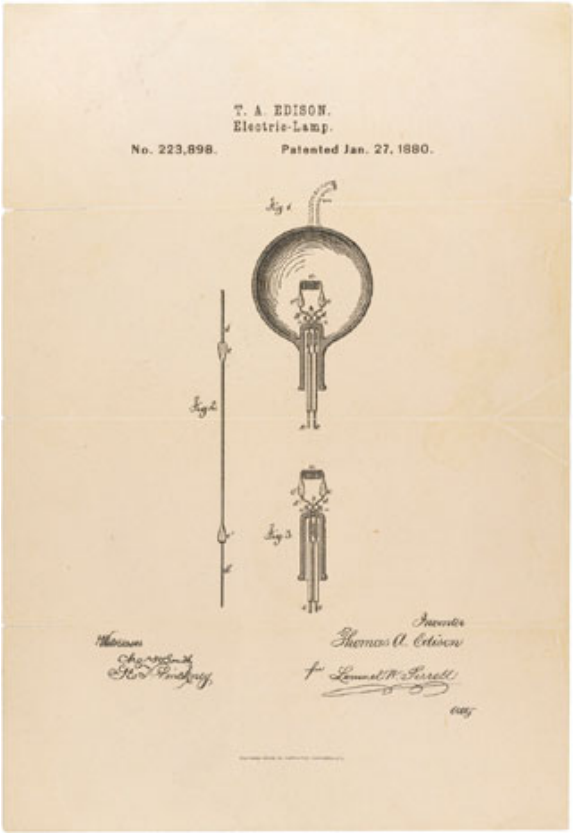
Know-how: the trouble

- Example: Former employee (made redundant) publishes trade secrets

- Remedy: 6-month period from non-prejudicial disclosure to file a European patent application (see Art. 53(1) (a) EPC).

Why patents ?

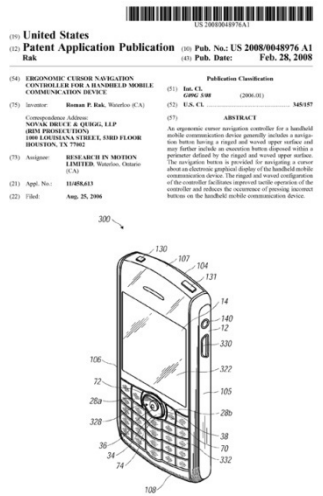
- Agreement between the inventor and society:
- -The inventor reveals the invention so that all know and can improve the invention, SECRECY NOT POSSIBLE
- In return, the inventor obtains the rights to exclude others from making or using the invention for commercial purposes.


T. A. EDISON.
Electric-Lamp.
No. 223,898. Patented Jan. 27, 1880.

Source: USPTO

Patents vs. Know-how

- Patents are <u>filed</u> and registered by public authorities
- Patents (applications) are <u>published</u> and contribute to a company's reputation
- Patents give <u>exclusive rights</u>



US 20080048976A1

(19) United States
(12) Patent Application Publication
Rak

(10) Pub. No.: US 2008/0048976 A1
(43) Pub. Date: Feb. 28, 2008

(54) ERGONOMIC CURSOR NAVIGATION CONTROLLER FOR A HANDHELD MOBILE COMMUNICATION DEVICE

(75) Inventor: Roman P. Rak, Waterloo (CA)

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(73) Assignee: RESEARCH IN MOTION LIMITED, Waterloo, Ontario (CA)

(21) Appl. No.: 11/458,613

(22) Filed: Aug. 25, 2006

Publication Classification

(51) Int. Cl.
G09G 5/08 (2006.01)

(52) U.S. Cl. 345/157

(57) ABSTRACT

An ergonomic cursor navigation controller for a handheld mobile communication device generally includes a navigation button having a ringed and waved upper surface and may further include an execution button disposed within a perimeter defined by the ringed and waved upper surface. The navigation button is provided for navigating a cursor about an electronic graphical display of the handheld mobile communication device. The ringed and waved configuration of the controller facilitates improved tactile operation of the controller and reduces the occurrence of pressing incorrect buttons on the handheld mobile communication device.

Are patents worth anything?: Avoiding redundant research

- Do not reinvent the wheel !!
- Use (also) patent information databases before R&D

Source EPO

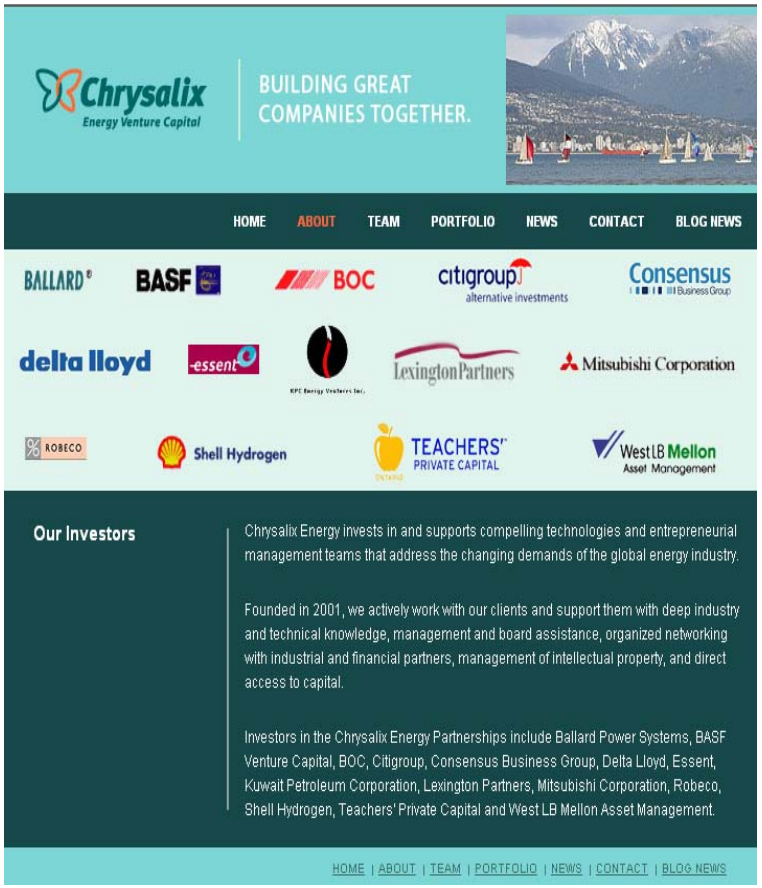
Why patents in a public Agency ?

- Taxpayers' money must, sooner or later, be returned back to their societies

- Who paid for your R&D ?

Private Investment

- Investor pools are investing in new sources of energies.
- Nuclear fusion is one of them.
- Energy venture capital



Company driven research in nuclear fusion

US 20060198483A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2006/0198483 A1**

Laberge (43) **Pub. Date: Sep. 7, 2006**

(54) **MAGNETIZED PLASMA FUSION REACTOR**

(75) Inventor: **Michel Georges Laberge**, Bowen Island (CA)

Correspondence Address:
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(73) Assignee: **General Fusion Inc.**

(21) Appl. No.: **11/073,276**

(22) Filed: **Mar. 4, 2005**

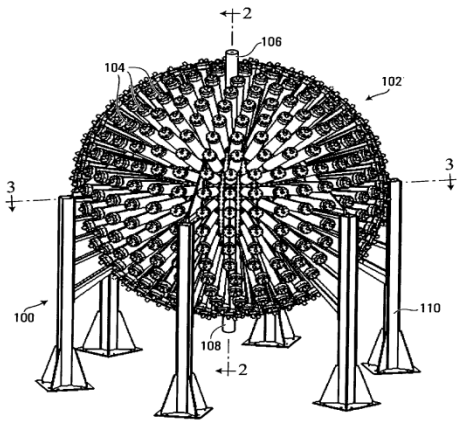
Publication Classification

(51) **Int. Cl.**
H05H 1/22 (2006.01)

(52) **U.S. Cl.** **376/100**

(57) **ABSTRACT**

A fusion reactor apparatus for initiating a fusion reaction in a fusionable material is disclosed. The apparatus includes a vessel operable to contain a liquid medium and a vortex generator operable to generate a vortex in the liquid medium. The apparatus also includes a plasma generator operable to generate a magnetized plasma of the fusionable material and to introduce the magnetized plasma into the vortex and a pressure wave generator operably configured to cause a pressure wavefront in the liquid medium to envelope the magnetized plasma and to converge on the magnetized plasma to impart sufficient energy to the fusionable material to initiate fusion in the fusionable material.



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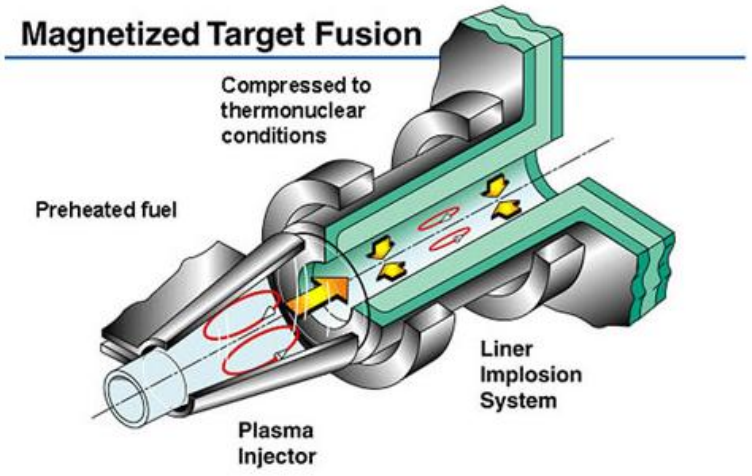
Fusion Power in the Next Five Years!?

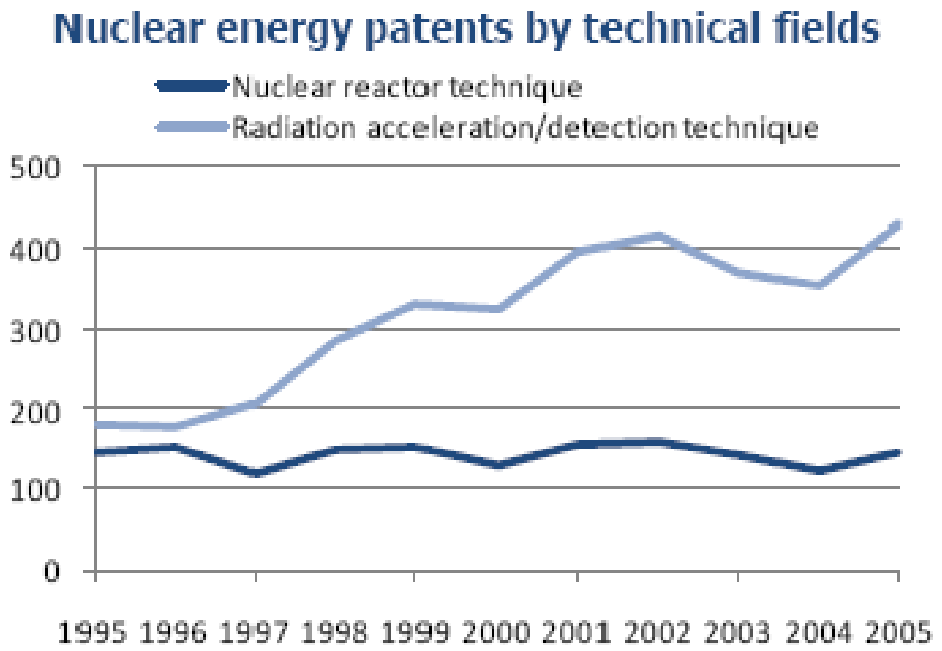
E-mail

Written by Hank Green

Monday, 11 February 2008



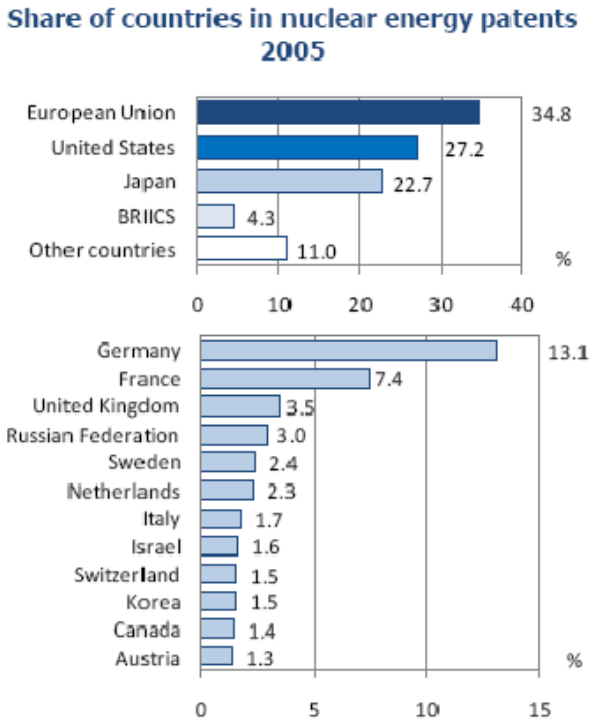
Patents filings in numbers for Nuclear energy



Source: OECD 2008

Share of countries in nuclear energy

- For 2005, a total of 450 new patents where filed worldwide
- The EU countries are the ones filing the most



When to leave technologies out of patent protection

- Technologies not coming into the market (direct or indirect use) within 20 years are not worth protecting (Patent term is 20 years).

- Example: MAGLEV: the magnetic levitation train. First patent filed in 1958.

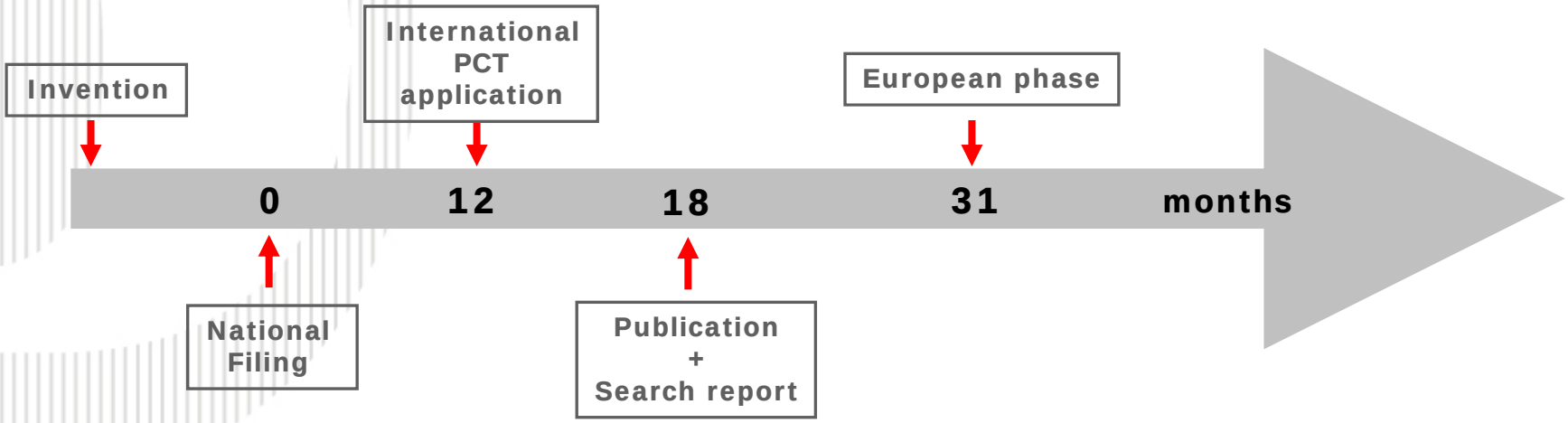
When to patent: spin off technologies

- Example: Memory foam.
- Main purpose: Initially developed to improve crash protection for airplane passengers by NASA.
- Spin-off use: Mattresses, pillows and seats.

Patent portfolio strategy

- Companies protect their key technologies and those related to their star products.
- Pruning the portfolio happens regularly (maximizing protection and minimizing costs).

- Patent pendency time is used to defer costs.



Low cost patents ?

- Write a maximum of 15 claims (use an attorney !) attached to your yet unpublished scientific paper
- File a European Patent (as priority document) but don’t pay any Office fees
- Patent application (if not published) may become evidence of your know how

Thank you very much

EUROPEAN COMMISSION
Community research

The IPR database

F4E Barcelona

By B. Bareyt (EC)

EURATOM

Content

- The actors of the IPR database
- Overview of the IPR database
- Data types and identification principle
- The « Legal Entity » module
- The « Publication » module
- The « Contract & IP Asset » module
- Summary of Specific functionnalities
- Access Rights: general
- Access rights in the Legal Entity Module
- Access rights in the Publication Module
- Access rights in the Contract & IP Asset Module

The actors of the IPR database

- The active actors are:
  - The EU Offices as the « European Commission » in Brussels (EC) or « Fusion for Energy » in Barcelona (F4E) for managing the IPR database,
  - The EU research institutes in Fusion, for recording IPR data and publications,
  - The private companies or universities having business with EU offices through public founded contracts on Fusion Technology & Engineering, for recording IPR data.
- The passive actors as referred entities in all documents are:
  - The Legal offices as IP registration offices,
  - All other organisations referred with a role in the Contracts, IP Assets or Licence Agreements as owner, inventor, author, etc.

Overview of the IPR database

- The IPR database consists of 5 modules:
  - 1 public one (the public IPR database), accessed from a normal http link,
  - 4 private ones (the private IPR database), accessed from a secure https link.
- 3 main private modules centralize the consultation & management of:
  - Persons & Organisations (EU offices, Institutes, universities, companies and legal offices) in the «**Legal Entity**» module
  - Contracts, License Agreements & IP Assets (patent, utility model, know-how, copyright, trademark, design, software and database) in the «**Contract & IP Asset**» module
  - Publications in the «**Publication**» module
- 1 common « **Generic** » module to the three previous one centralizes specific functionalities as:
  - « **My Mailbox** », for managing internal messages,
  - « **My Workspace** » for managing draft data,
  - « **Deleted items** » for managing deleted data.
- 1 separate « **public** » module for consultations of:
  - IP Assets and Publications, published by the user from the records of the private IPR database.

Data types and identification principle

- All data are « data-rows» managed in list pages, in all modules:
  - Organisations & persons as entity data,
  - Publications, Contracts, IP Assets & Licence Agreement as document data.
- Each « data-row» is versionned after saving data with the possibility to manage older or deleted versions.
- A metadata form is associated to each data-row for managing the fields (columns) of a data-row
- Files (up to 999 files) can be attached to a document data-row (persons & organisations excluded)
- Persons & organisations are identifed by their full name:
  - Last name & First name for persons and
  - Name & Branch for organisations.
- Documents & files are identifed by a reference number:
  - For documents as XX-NNNNNNNNN (X as letter, N as number)
  - For files as 'Doc number & Rank' as: XX-NNNNNNNNN-PPP (P as number).
- Person and organisation data are only stored in the « Legal Entity » module to be referred in the documents; only the index of the entity is stored in the metadata forms, not the full name.

The « Legal Entity » module

- This module allows managing persons & organisations to be referred in the documents (Publication, Contracts, IP Assets & License Agreement):
  - In the « person » list page for persons,
  - In the « organisation » list page for organisations.
- The module permits the user:
- Registering users & organisations (mainly by EU Offices),
- Creating and managing entity data,
- Searching data or making selective lists of entity data by setting filters,
- Exporting lists of data-rows into Excel format,
- Managing older or deleted versions of a data-row,
- Managing duplicate data.

The « Publication » module

- This module includes one main page and permits the user:
- To create & manage publications in the publication & search list page:
  - Making restricted lists of publications by setting filters,
  - Searching a publication from a string in the fields of the form or text in files,
  - Exporting lists of data-rows or forms into Excel/pdf format.
- To implement links from the command « Manage links » between a publication and:
  - Others publications or
  - IP Assets.
- To manage future actions to be done at the level of a document from the command « Postponned actions ».
- To manage older or deleted data versions.
- To publish publications on the public site.

The « Contract & IP Asset » module

- This module includes two main pages and permits the user:
- To create & manage contracts, IP Assets & License Agreements in the contract list page.
- To make lists of documents within contracts by setting filters in the contract list page.
- To export lists of data-rows or forms into Excel/pdf format.
- To additionally search individual documents in the Advanced Search list page from a string contained in the fields of a form or text in the attached files.
- To implement links from the command « Manage links » from a document to other documents, including publications.
- To manage future actions to be realized at the level of a document from the command « Postponned actions ».
- To manage older or deleted data versions.
- To publish IP Assets on the public site.

Summary of Specific functionalities

- The user can additionally:
- Manage internal messages from « My Mailbox » (generic module).
- Manage draft data in the « My workspace » functionality (generic module) and quickly find a draft version.
- Quickly access recently opened or saved documents from « My Recent documents » functionality.
- Export lists of data-rows into Excel format or forms into pdf format from the « Export » commands.
- Manage future live actions to be implemented in documents from the « postponned actions » command; the user is warned via internal mails or external emails.
- Implement different kinds of links between documents from the command « Manage links ».
- View and manage old versionned or deleted data.
- Publish documents on the public site (IP Assets & Publications).

Access Rights: general

- A granted access to the private IPR database is preliminary required to create and manage data.
- Any EU Office has full access rights (Read & write) to all data and commands.
- Any organisation other than an EU Office has limited access rights to access data and commands:
  - Default access rights (Read and Full access) which are automatically assessed,
  - Additional access rights which can be allocated by other organisations from the command « Access Right ».
- The default access rights depends on the type of data as defined in the following slides.

Access rights in the Legal Entity Module

- Accessing « Organisation » data:
  - Any organisation can create a new organisation data-row;
  - Default full access (Read & Write) is only allocated to the organisation having created the data-row;
  - Default Read access to all organisation data-rows is allocated to any organisation (Read access to everyone).
- Accessing « Person » data:
  - Every organisation can create a new person data-row within any hosting organisation;
  - Default full access (Read & Write) is only allocated to the organisation having created the data-row;
  - An organisation has No default access to person data-rows created by another organisation;
  - Personal information, if any, is only accessible to the organisation having created the person data-row.

Access rights in the Publication Module

- Accessing « Publication » data:
  - Any organisation can create a new publication data-row;
  - Default full access (Read & Write) is only allocated to the organisation having created the data-row;
  - An organisation has No default access to publication data-rows created by another organisation.

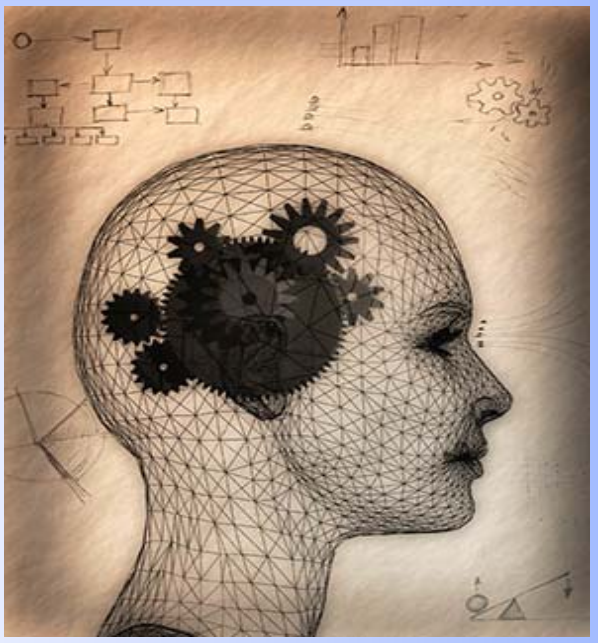
Access rights in the Contract & IP Asset Module

- Accessing « Contract » data:
  - Only an EU Office can create a new contract (command not visible to other organisations);
  - Only a default Read access is allocated to the contractors, referred in the contract.
- Accessing « IP Asset » data:
  - An organisation, referred in a contract and having at least a Read access to the contract, can create a new IP Asset from the command New IP Asset of a contract;
  - Default full access (Read & Write) is only allocated to the organisation having access to the command New IP Asset of a contract.
  - Default Read access is allocated to:
    - The contractors referred in the IP Asset as IP Manager,
    - The organisations referred as Licensee in a linked License Agreement.
- Accessing « License Agreement» data:
  - Any organisation, having full access to the IP Asset, can create a new License Agreement from the command New Licence Agreement of an IP Asset.
  - Default full access (Read & Write) is only allocated to the organisation having access to the command New Licence Agreement.
  - Default Read access is allocated to:
    - The contractors referred in the linked IP Asset with the role of IP manager,
    - The organisations referred as Licensee in the License Agreement,
    - The organisations referred as Owner-Licensor in the License Agreement.

Thank you for your attention.

Now it is time to practice for better understanding of what is the database and on how to use it!

INVENTOR'S AWARDS AND PROFESSOR'S PRIVILEGE IN F4E'S GRANT AGREEMENTS



Professor's privilege concept implies that the results of publicly funded research created or developed by **staff employed as researchers** (professor's) are **owned by** them and not the institution where the research has been carried out.

VS.

The approach of the **Institutional ownership** is opposite from above where the results of publicly founded research is **owned by the institution** where the researcher works.

Automatic – the employer is the first owner of the invention

Pre-emption – the researcher is the first owner of his invention, shall declare it to and the employer has then the right to 'claim' for invention within the defined period

No harmonization on EU level ⇨ national rules of the Member States apply

Professor's privilege	Institutional ownership	
	Automatic	Pre-emption
Italy and Sweden	Belgium, Cyprus, Estonia, France, Greece (service inventions), Ireland, Latvia, Luxembourg, Malta, Netherlands, Portugal (joint ownership), Slovak Republic, Slovenia, UK, Spain	Austria, Czech Republic, Denmark, Finland, Germany, Greece (dependent inventions), Lithuania.

⇩

Majority of the Member States prefer the Institutional ownership, because it facilitates the commercialisation of the research results by public research bodies

Despite the above division of the approaches regarding ownership, *many of the EU countries establish the right of the researcher to the award/compensation for the invention*.

BUT !

It is generally limited depending on:

- **type and the use of the intellectual property object;**
  (for instance only patents + in commercial use)

and conditional depending on :

- **the status of the employee (whether they were specifically employed to invent and therefore are not entitled to remuneration as of right, and the ones not employed to invent)**

The Summary of the Right for award

Country	Does national law provide a remuneration right?	Comments
Austria	Yes	Limited to patents.
Belgium	Yes	
Cyprus	Yes	Limited to patents.
Czech Republic	Yes	Patents, industrial designs & copyright.
Denmark	Yes.	
Estonia	Yes	Copyright.
Finland	Yes	Inalienable.
France	Yes	

DRAFT REPORT TO THE COMMISSION (DG RESEARCH) "Monitoring and Analysis of technology transfer and intellectual property regimes and their use" from Mason Hayes+Curran

Country	Does national law provide a remuneration right?	Comments
Germany	Yes	If the results are assigned to employer.
Greece	Yes	Patents and integrated circuits.
Ireland	No	Can be agreed by contract.
Italy	Yes	
Latvia	No	
Lithuania	Yes	Patents: employment but not where original contract was "to invent" or where the employee was given extra payment for those duties.
Luxembourg	No	In the case of patents a right to an "equitable part of the realised profit" exists.

DRAFT REPORT TO THE COMMISSION (DG RESEARCH) "Monitoring and Analysis of technology transfer and intellectual property regimes and their use" from Mason Hayes+Curran

What about Fusion for Energy?

Model Grant Agreements ⇨ *"If employees or other personnel working for the beneficiary are entitled to claim rights to foreground, the beneficiary shall ensure that it is possible to exercise those rights in a manner compatible with its obligations under this grant agreement."*

⇩

In those situations where the employee of a beneficiary (including subcontractors) may claim a right on foreground, the beneficiary shall provide for an agreement with them in order to meet its contractual obligations with F4E (including the one to grant access to other participants)

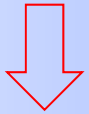
The reasoning behind this approach is that **inventors are not a contracting party to the Grant Agreement**, nor do they have any privileged relationship with F4E. Accordingly, F4E does not have any particular position as regards compensations to researches nor it is concerned by the ownership regime insofar none of these questions prevent F4E for exercising its rights to the foreground.

FUSION FOR ENERGY

BUT!

Draft Rules on Industrial Policy and dissemination of information to be adopted soon steam at achieving the following goals:

- to provide ownership conditions to the results generated in F4E's Grant Agreements that facilitate the exploitation of such results by those which have generated them;
- to provide for appropriate IP clauses that address as much as possible the specific needs of our partners in the Grant Agreements placed by F4E.



F4E's Industrial Policy emphasizes the need to protect generated results as Intellectual Property Rights (e.g. patents) where possible to facilitate technology transfer and commercial exploitation of such results. To foster the protection of results we could envisage some measures to encourage both researchers and associations to patent.

YOUR SUGGESTIONS?

THANK YOU!

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