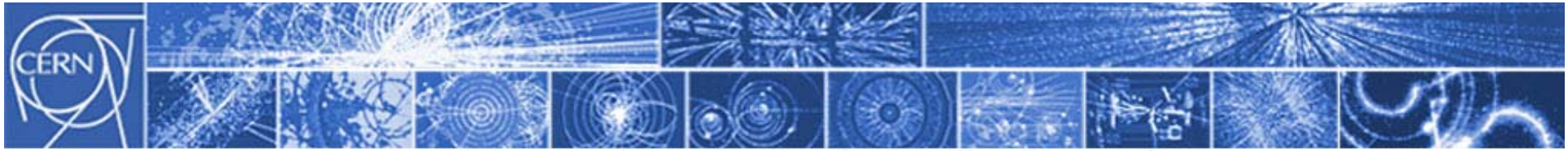

CERN

European Organization for Nuclear Research
Organisation Européenne pour la Recherche Nucléaire

MPGD & RD51 Workshop at NIKHEF

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Intellectual Property Right and Technology Transfer

Bernard Denis,
CERN-DSU-TT
Bernard.Denis@cern.ch

Intellectual Property Right Vs Technology Transfer

Intellectual Property Right

is about the right you have to control the access and use of your knowledge and innovation

Technology Transfer

is about transferring public research knowledge and innovation to industry for commercial exploitation using:

- licensing
- collaborative R&D
- consultancy
- spin-off

Outline

Intellectual Property (IP)

- *What is IP(R)?*

- *Patenting at CERN*

- *IPR and public research*

- *Managing IP in R&D collaborations*

- *Importance of IP management*

IP in RD51 collaboration

- *Principles*

- *Open issues*

Technology transfer approach for GEM

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Intellectual property: what is IP(R)*?

Intellectual Property Right

- Patents, utility certificates, utility models, industrial design rights, copyrights, database rights, secrets, any protection offered by law to drawings, specifications, photographs, samples, models, processes, procedures, instructions, software, reports, papers, semiconductor IC topography.

Intellectual Property

- Invention or other subject capable of Intellectual Property Right.
- Ideas as such are NOT capable of IPR

* Other definitions exist

Patenting at CERN*

Motivation

- *Image of CERN as source of innovation with an economic impact*
- *Revenues is NOT the primary motivation*
  - *Fair share of commercial revenues*
  - *while allowing free access for research in the HEP community*

Benefits of the patent system

- *The originator and owner of the invention are clearly identified*
- *Inventions are better formalized, tangible and easier to transfer*

When do we patent?

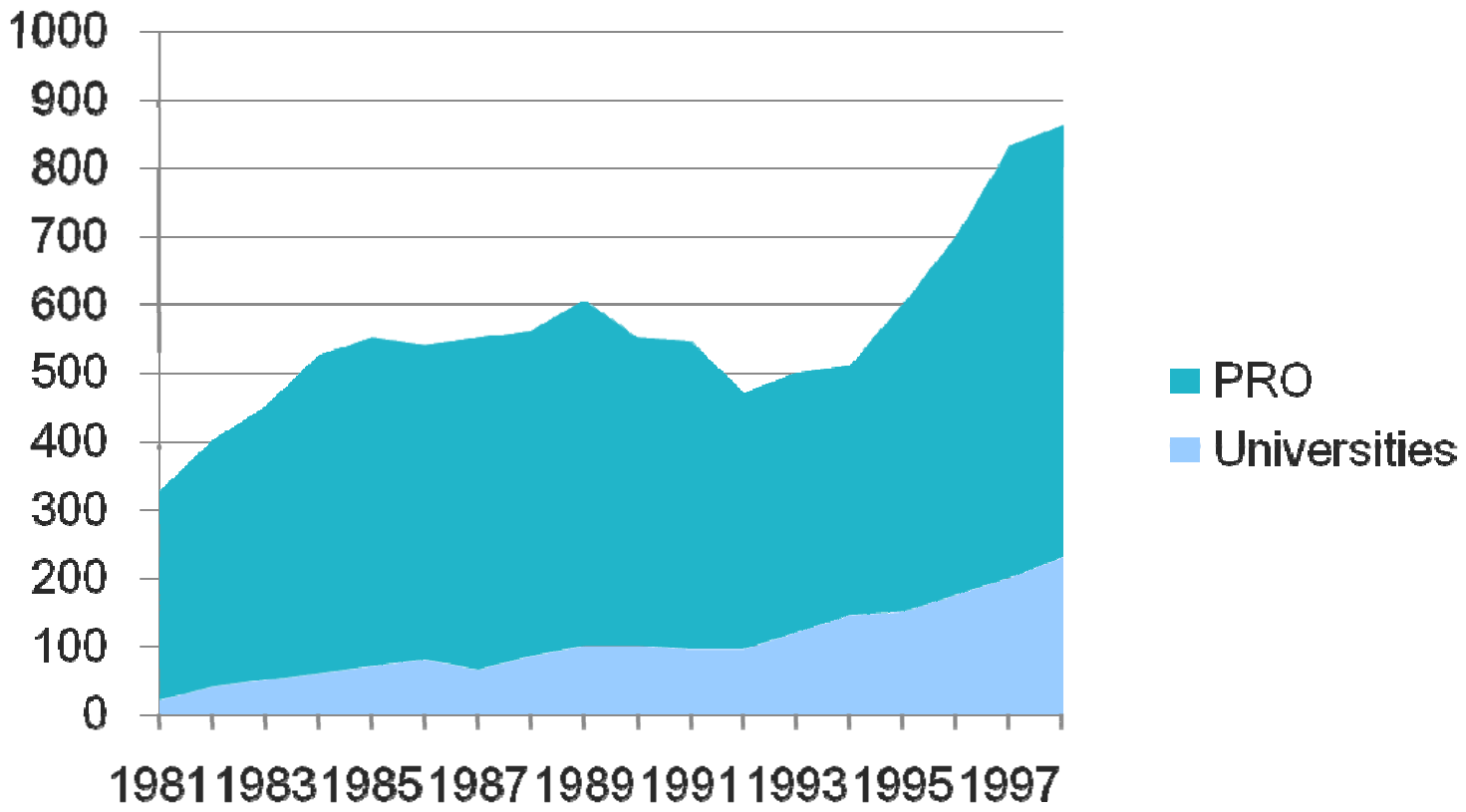
- Invention made in the framework of HEP programme
- Invention made in the framework of collaborative R&D with industry

Why do we patent?

- We patent when we believe the invention has a commercial potential

* Strategy currently being reviewed

IPR and public research



Patents at the EPO owned by universities and PROs in Germany, France, Italy and UK
Source: EP-CESPRI Database (also Montobbio, 2007)

IPR and public research

Debate between advocates of "private property rights" and "open science and innovation"

"Experimental use exemption" allowing any party to use a protected invention (or data, etc.) for experimental purpose without the consent of the right holder.

Borderline case: research tool !

Problem of "legal certainty":

In EU countries: statutory experimental use exemption (except Austria)

- Exemption for experimental purposes relating to the subject matter of the patented invention but
  - "solely for research"
  - "purely experimental purpose"
  - experimenting on and experimenting with the patented invention.

Limited exemption in the US and it does not apply if there is any commercial element into the experimentation

- Commercial use as opposed to with a commercial view

The Japanese Patent law permits experimentation on but not with a patented invention

Managing IP in R&D collaborations

Managing IP in R&D collaborations means:

- defining access to pre-existing IP(R) (so called *background IP*) in the framework of the collaboration
- defining access to results (so-called *foreground IP*)
- clarifying rules for the dissemination of results
- defining mechanisms for the exploitation of jointly owned results:
  - who take the lead to protect?
  - how the revenues from commercial exploitation will be shared?
  - what kind of agreement are needed? who will draft the contracts?

Experience at CERN:

- Medipix2, Medipix3, CCC

Importance of IP management in collaboration

"The IP aspects of the relationships between the participants in collaborative research determine the nature and success of these activities, and play a crucial role in the design of the structures of the collaboration; they cannot be added as an afterthought"

Expert Group Report on *the Role and strategic Use of Intellectual Property Rights in International Research Collaborations*, April 2002.

The aim is to allow :

- Freedom to research and wide dissemination of results
- Access to public funds
- Effective management of financial return

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Principles

Declaration of background IPR

The members of the collaboration declare what background IPR they make accessible to the collaboration and the possible limitations.

IPR needed to execute a project performed in the framework of the collaboration shall be declared at the outset of the project.

Free access for research

The members of the collaboration give to all members of the collaboration a royalty-free, non-transferable, non-exclusive right to use declared background IPR and foreground IPR for research purpose and for use in high energy physics, nuclear physics and astroparticle physics experiments.

Ownership of foreground IP

IP owned by the party generating it.

Dissemination of results

Results published in reviewed journals and presented to conferences referring to the authors of the collaborating institutes.

The parties owning the foreground IP make the decision to protect it or not. No publication shall take place before the decision is made.

Open issues

Projects in the framework of the collaboration

Should IPR be freely accessible to all members of the collaboration or only the institutes taking part in specific projects?

In case of specific IP and/or presence of industrial partner, need to define

What are the rules that should apply for industrial partners in terms of access to IPR?

Mechanisms for the commercial exploitation of joint IP:

- Who takes the lead to protect the joint IP

- Who takes the lead for the exploitation?

- Re-destribution of revenues (to the collaboration fund)?

Need for specific agreement. What could be defined in the collaboration agreement?

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Patents covering the use of GEM foils as gas detectors

- *CERN patent ("Radiation detector of very high performance")*
- *CNRS patent ("Detecteur de rayonnements ionisants a microcompteurs proportionnels")*
- *CERN has signed an agreement with CNRS allowing CERN to sub-license the access to CNRS patent*

CERN TT actively transfer know-how to industrial partners to allow them to become GEM producers and will propose a license allowing the producers to sub-license on a non-exclusive basis the full right to use GEM to their customer

- *3 firms in Europe, 1 in the US and 1 in Japan.*

Option1

Sales data with customer names

A% royalty for commercial customers

a% (very low) for public or non-for-profit research organizations

Option 2

No sales data

B% (B<A) royalty

Encouragement to give favorable financial conditions to public and non-for-profit research org

Conclusion

"Intellectual property rights can be used to promote openness and cumulative innovation as much as they are used to promote exclusivity" (O'Mahony, 2003)