AMICI-ARIES workshop on Intellectual Property in collaborating activities between Research and Technical Infrastructure and Industry
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with contributions of speakers

Preamble

Both H2020 projects AMICI (CSA) and ARIES (IA) are strongly involved with industry and have to deal with different aspects of Academia-Industry collaboration. In the dedicated Accelerator-Industry Co-Innovation Workshop organized in Brussels in February 2018 the specific problem of the Intellectual Property (IP) was raised. The management of the IP is in general a main ingredient in the Co-Innovation activities (or in all cases joint projects are performed) and from a very general point of view, it is generally accepted that standard common practices and procedures should be agreed. To this aim and with the idea to base specific agreements on existing solutions, AMICI and ARIES decided to look at the IP schemes adopted by the KT offices of the large EU scientific organizations and profit of their experience.
This was the motivation for organizing a mini-workshop on IP with the goal to identify standard procedures from the experience of large labs, get on them the feedback from industry, and possibly converge on possible IP management schemes to be applied to future EC projects.

Agenda of the Workshop

The agenda and presentation given at the workshop can be found in the web-site https://indico.cern.ch/event/723985/.
After an introduction about the objectives of the meeting, four presentation were given by KT experts: M.Ayass (CERN) on *CERN and IP policy*, L. Fimmen (Desy) on *Innovation and Technology Transfer*, I.Gianmarioli (INFN) on *IP issues in the procurement of items related to magnets and accelerators* and from E.Bain (STFC) on *Managing IP in a National Government Research Laboratory Open innovation* . Industries were present to the meeting and contribute to the discussion: A.Ceracchi (CECOM) with a presentation *IPR- An Industrial point of view*, C.Boffo (Bilfinger Noell GmbH) with *Industry perspective on IPRs*,

A.Pellecchia (ASG-Superconductors) with *The IPR in collaborating activities with Academia* and some written statements sent to organizers by JL Lancelot (Sigmaphi).

Main points emerged from presentations and discussions

- **Open Doors.** Generally the R.I. have open doors to collaboration with industry. In particular STCF and DESY offers two examples of integrated eco-systems academia-industry. . In this kind of environment the IP management is an important factor.

  STCF. The STFC facilities can be accessed by users from both academia and industry. In particular STCF has created a framework (the Business friendly campus) for joint incubation activities, start-ups, spin out companies, SMEs and large companies with synergy to science and engineering , technology scouting from large corporates.

  DESY. DESY is offering innovation services by: a) providing an easy and direct access to large scale research infrastructure.; b) optimizing internal processes to quickly handle offers and purchase orders with minimal administrative afford for the scientist; c) offering access to the whole DESY-Ecosystem – single access point; d) offering packages by involving all sources available on campus; e) Enable start-ups and spin-offs originating in the fields of DESY's research by providing support through a start-up office and setting-up an innovational ecosystem.

- **IP classification.**
  - **a) IP in Academia**. A university has not-for-profit status. Employees are researchers that bring money into the university from grant funding; they can wield a lot of power and have huge leverage over IP decisions. Academia's requirements for IP generated in a project are primarily to publish results of research and show the impact of the establishment's research in tangible terms; this can be through licensing IP for royalty income or sale of know-how through consultancy.
  - **b) IP in Industry.** For an industrial partner the strategic goals are to make and sell products and services for a profit. The organisational goals will be to gain a competitive edge from future new products and processes. IP is a commercial tool, and as such industrial partners take a corporate approach to safeguarding their assets. Employees must follow strict processes and procedures. The roles of the Legal departments and

technical departments are clearly delineated. Industry requirements for the IP generated in a project will be to give a company freedom to operate, to make and sell the new products, services in the future

c) **IP in R.I. or T.I**. The strategic goals of R.I. is to enable scientific research through its engineering and skills whilst maximising the impact of the organisations IP to the economies and societies of its funding stakeholders. A government funded laboratory's IP requirement for IP generated in a project is generally a hybrid of industry and academia; primarily it requires its IP in order to efficiently operate the laboratories on a day-to-day basis (freedom to operate) which can be through publication or patenting. Another strategic goal of R.I.s is to transfer their IP to industrial partners for industrial application outside their research field through licensing or selling IP that is not critical to day to day operations..

- **IP policies**. Research Institutions generally do not expect to get rich through knowledge transfer but they cannot do it for free in order to: 1) guarantee equality of treatment to all Companies; 2) start a positive mechanism of redistribution of the income to the departments working on innovative projects. Intellectual property ownership can be the most contentious factor in collaborations. It can hold up contract negotiations and project start dates. IP disagreements can cause irreparable damage to partner relationships, so it's worth getting right. IPR are complex commercial tools that do not sit well in non-commercial organisations. Most High Energy Physics collaborations/consortia will be grant funded and made up of different types of organisation's; government funded laboratories, universities and industry. They will each have their own strategic goals that drive the organisations IP Policy, and internal processes and procedures to support the implementation of the IP Policy which are quite different. The idea of a common IP policy to be shared by all the stakeholders presently seems difficult: each public organization has to comply with different national or international regulations related to industrial partnership. This is more than likely in case of public procurement regulations.

- **An example of IP policy**. The **CERN approach**. In the following points a summary of CERN IP policy principles is reported.

1- Use of technology transfer practices that maximise the dissemination and visibility of technologies. In cases where revenue generation and dissemination conflict, the priority is given to dissemination.
2- Use of IP management and technology transfer practices compatible with collaborative and open research.
3- Priority given to CERN's scientific programme. In this context, CERN does not normally accept commitment for deadlines, time constraints, volume, or meeting specifications.
4- Equal opportunities for industry in all CERN Member States through e.g. wide promotion of available technologies.
5- Preference for technology transfer to industry established in CERN Member States.
6- Adoption of appropriate measures to avoid that technology transfer to industry impairs the application of the principle of fair competition in future procurements
7- No technology transfer for military applications.
8- No competition with industry.
9- No commercial role or responsibilities for CERN.
10- CERN normally transfers technologies on an "as-is" basis and does not provide guarantees or accept liability for the use and commercial exploitation of the transferred technologies

- **IP agreements.** All the Research Institutions (R.I.) present at the workshop are extremely open to cooperate with industries and negotiate appropriate agreements on a case by case basis. R.I. through KT offices are willing to bring their knowledge and technologies to the market: the companies play a key role in this process. Companies can exploit their engagement in the industrialization phase in order to develop expertise and become more competitive.
- **Approaching an IP agreement. Some rules.**
  1- From the first contacts, confidentiality should be assumed if no confidentiality agreement is in place (presumed confidentiality) as a point of mutual respect for each other's IP.
  2- As soon as the ideas take shape and the relations becomes more formal a retrospective agreement can be put in place so all parties can speak freely without jeopardising their or partner organisation's procedures.
  3- Back office support, finance, legal and IP management should be brought into discussions early on, to support the technical team. The IP Manager

and Legal team should take the lead in contractual discussions to protect the technical teams working relationships.

4- When it comes to the bid all the IP to be used in the project should be listed as Background IP and provision should be made for the addition of background IP throughout the project.
5- The hard decisions need to be made at the beginning and communicated in a clear and consistent way in order to manage expectations manage; be fair, be reasonable, and endeavour to understand partner perspective and motivations.

- **Industry remarks.**
  - Companies involved in the knowledge transfer activities ask for more confidentiality on trade secrets, direct access to the know how needed to exploit any licensed patent and exclusive advantages with respect to their competitors: all these requests can be met by means of specific agreements (licenses, research contracts, partnership, etc).
  - Industry is willing to invest in new technology or products, it becomes difficult in some cases: i) when the market chance is not clear enough, when the institute which provides the IP is part of the customer target group, ii) when the market is too far away from the established customer base of the specific industry thus requiring to build up a new sales network. Industry, iii) when evaluating the format of technology transfer, sees a difference in value between know-how that is protected with respect to the one that is not. This usually makes a difference in terms of duration of the advantage toward competitors

- **Possible scheme for IP managing RI-Industry**. A dedicated meeting on IP has been recently held at CERN in the framework of the H2020 project FuSuMaTech (Future Superconducting Magnet Technology) leaded by A.Dael (CEA). In this meeting a scheme for managing the IP when dealing with magnets has been proposed. This scheme looks interesting and could be considered an example to be followed also for different fields related to accelerator development.

Multi-layered Approach	IP
Open Access	**Magnet Functional Characteristics** Field intensity, DSV dimensions and homogeneity, Fringe field footprint Warm bore size Magnet size
Commercial Access	Top level mechanical drawings Top Level Electromagnetic design (possibly)
Limited Access (Under NDA FuSuMaTech need-to-know Partners)	Force distribution Mechanical interface
	Cooling solutions Top level protection strategy
No Access (ASG Trade Secret and Patent Portfolio)	Design, manufacturing and process IP