ARTICLE:

USE AND EXPLOITATION OF INTELLECTUAL PROPERTY IN THE CONTEXT OF PUBLICLY FUNDED RESEARCH AND DEVELOPMENT: RECENT LEGAL DEVELOPMENTS IN GERMANY AND IN THE EUROPEAN UNION

Hanns Ullrich*

OUTLINE

* Prof.Dr. iur. M.C.J. (New York University).

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I. INTRODUCTION

Ladies and Gentlemen, contrary to what you may think after yesterday evening's pleasures, this is not a very early hour for the first morning presentation. It is actually a very late hour, at least for Europeans. It is now 5.30 p.m. in Germany, and instead of missing the remainder of your morning sleep, you should have finished your after-lunch nap by now!

Be this as it may, I have no intention of stealing the sleep from your eyes. My subject is not the fascinating kind that makes everybody wake up nor is it the gentle kind that gives you sweet dreams. Nobody in Europe has ever heard that university technology transfer is a truly rewarding business or a seductive activity; at best it is an American dream. Therefore, I am all the more grateful that I have been invited here. I want to thank CASRIP ever so much for its hospitality, and I want to thank you for your presence this morning. I have, indeed, little to offer you.

The European Union has fifteen Member States, each having its own research and technology policy and its own approach to technology transfer from public research organizations (PROs) to the industrial sector. The only common feature is the political feeling and will that this transfer must be supported and must be made to work more efficiently. Intellectual property, generally, is not at the center of these efforts. They turn more around the question of how to directly involve the researcher in this process (*e.g.*, transfer of people, establishment of spin off-companies, authorization to sit on the board of directors of industrial companies). However, intellectual property has an important supporting role to play. This has been stressed just recently by a committee of experts of the European Technology Assessment Network.

Since it is impossible to present the practice of all, or of even the most important European countries, I shall concentrate on what I know best, namely Germany and the European Union. I am also unable to present more than some recent developments. However, to make them comprehensible, I shall try to put them in the context of the objectives and of the organization of German and European technology policy. To do this I must take a rather general view with little attention to details, however important they may be. However, one express caveat is on point. At least in Germany and in the European Union, most principles of technology transfer were originally conceived with a view to R&D results, which may be protected by patents. Little attention has been paid to copyright protection. Yet copyrights have become extremely important in almost any area of publicly funded R&D, not only in the information industry, properly speaking.

Information processing is a cross-sector technology, and as a result, copyright protection applies everywhere. But it is very different from patent protection, especially from the perspective of the transfer and the dissemination of the results of publicly funded R&D. In Europe, it is not a registered right. It is identified only by the protected work, which, in most cases, is intangible, and generally kept secret. It comes into being by the creation of the work and it exists as long as the work exists (in the case of computer software it even survives the utility of the work). Therefore, there are no registration or maintenance fees, no applications that need to be made or abandoned abroad. Copyrights are not exploited or infringed by use, but by reproduction. However, it also extends to adaptation, *i.e.*, it provides for both less and more protection than does a patent. None of these distinctions are made in either the German or the European rules on technology transfer. These rules heavily rely on the public dissemination of publicly funded R&D results, on their joint use by all interested parties, on the difference of

access to foreground and background rights. What is background in the case of evolving software? So my following remarks also will be made from a patent perspective, rather than a copyright perspective.

II. THE GERMAN APPROACH

1. The Funding System

The financial resources of the German system of science, technology and innovation are of various sorts. Industry, while contributing more than 60% to the total domestic R&D expenses, largely finances its R&D itself (~90%). However, in addition to government R&D contracts (mostly Department of Defense, ~2.5 billion DM), industry also receives some 2 billion DM in the form of grants of subsidies for specific R&D projects. These subsidies come mostly from the Ministry for Education, Science, Research and Technology (now split into Ministry for Education and Science, BMBF, and Ministry for the Economy and for Technology, BMWiT).

Public research organizations fall into several groups: the universities, which are institutionally funded by the *Länder* (federal states), the large research establishments, grouped in the *Helmholtz-Gesellschaft* (HGF), the Max Planck Society (MPG), the Fraunhofer Society (FhG), and about 60 other smaller institutions of the *Leibnitz-Gesellschaft*. Basic funding for these four large groups is provided by a financing pool supported by both the Federal Republic and its Federal States, but ratios vary (~90% for MPG; less than 50% HGF, less than 40% FhG). Accordingly, public research organizations depend more or less on additional project funding from outside sources. Universities will normally apply to the *Deutsche Forschungsgemeinschaft* for project funding (the counterpart to the NSF), but a large share of their externally financed projects (~20%) is supported by direct grants from the Ministry for Science and/or Technology. The ministries are in charge of promoting R&D as a matter of strengthening international competitiveness of industry, or of filling gaps in R&D which the market will not provide for. Principal clients of the Ministries are the HGF, the FhG and a number of institutes (of the *Leibnitz-Gesellschaft*), whereas the MPG is only marginally living on external project funding. Leaving aside industry funding of PRO projects (which is considerable for the HGF and the FhG, but does not exceed 10% for academic projects), it becomes clear that the conditions for the grant of federal support to individual PRO projects are of crucial importance for the exploitation of

R&D results of PROs. Even more so, since it is these projects which may yield marketable results, if at all.

2. The Old Rules: Sharing Publicly Funded R&D with the Public

Indeed, grants by the Ministry of Science or by the Ministry of Technology for specific R&D projects are subject to particular conditions regarding not only the execution of the project, but also the exploitation of its results. As regards this latter aspect, three points are noteworthy.

First, the conditions for the grant of subsidies for industrial R&D projects vary according to the level of funding, this being measured as a percentage of project costs. The rule is 50% funding. Second, the conditions for the award of project funding to PROs basically follow the structure of 50% grants to industry, but they may be stricter. Third, after more than three years of discussion, the conditions have been modified drastically, taking effect from March of this year. The reason for this drastic change is that the old conditions did not result in as much industrial innovation as its proponents had expected in 1973 (*i.e.*, a quarter of a century ago). To understand this failure, and the importance of the change, a short look at the old conditions may be useful.

The old rules were based on the idea that the grant of R&D project funding was a privilege that must be subject to conditions which make sure that the benefits are shared with the public, and that whatever competitive advantages may result from the funding should not take the form of an exclusivity. Consequently, the grant was burdened, first, with the condition that the grantee makes the results available for government use; more specifically, that the government obtains a non-exclusive, paid-up license. Second, the grantee had to grant a non-exclusive license to any third party, including competitors, against a royalty, the level of which has to be determined with due regard to the public funding. Third, exclusive exploitation by the grantee or by a licensee was subject to government approval, this being considered an exception. Fourth, excessive license income was subject to certain payback provisions. Fifth, conditions for PROs were even stricter in certain respects (licensing of background for government purpose, general obligation to first pay back the grant).

These conditions made the grantees instruments of technology policy. They frustrated their interests in exploitation and licensing because risky innovations require protection by a limited exclusivity, and because market profits are the incentives and the reward for innovative undertakings. There

was also no incentive for licensing. Industry was under no obligation to license its know-how, but only its patents, and royalty income was limited. Interest in licensing by PROs was totally frustrated due to the payback rules and the limits set on royalties. The approach really was a negative one. The grantee had to tolerate concurrent use of patented project results. It had no reason to develop a pro-active strategy of exploiting and licensing project results. Arguably, there was a sound reason for this since the conditions invited industry to submit only those projects to government funding that held little promise of yielding patentable results, *i.e.*, basic and general research. After all, government should not support projects with clear or at least foreseeable commercial benefits. However, as regards PROs, this rationale did not apply. Instead, the idea was that PROs had to do research for the benefit of the general public anyway, and that they should not attempt to make money on the basis of the taxpayer's money.

3. The New Rules: Promoting Innovation through Autonomy of and Responsibility for the Protection and the Exploitation of Intellectual Property

a) Model Rules for subsidized R&D of Industry

It is not that a quarter-century of public funding of R&D projects of industry and of PROs has not given good results. However, it has produced much more good knowledge than successful innovations. After all, the R&D programs of the Federal Government were intended to enhance the competitiveness of German industry (*e.g.*, computers and software), not only to catch up in science (which was the purpose in the fifties and early sixties). The purpose was also to open up new fields of commercially interesting technology (*e.g.,* biotechnology) or to make knowledge available for commercial use in areas into which industry would not venture (market failure—areas such as protection of the environment by exhaust emission control). In short, knowledge creation by public money was in need of a follow-up: transformation into an innovation by introducing it or its embodiments into the market place. To this effect a fresh, pro-active approach was necessary. The new rules were intended to put such a pro-active strategy into operation by stimulating the self-interest of the grantee into achieving successful innovations, and by relying on the forces of dynamic competition as a check to competitive advantages gained through public funding. Ultimately if the innovation is successful, it will yield individual profits that, via the tax system, will return the public subsidy to the public treasury.

What are the new rules? They are based on some rather straightforward but balanced principles. These are best explained, first, as regards public funding of R&D projects of industry.

(i) Autonomy and Exclusivity

One major principle is the autonomy of the grantee as regards the exploitation of the project results. To this effect, and in recognition of his own efforts, ownership of the results, including all intellectual property attached to them, lies with the grantee. As a consequence, he has the right to exclusively exploit the result either directly or indirectly through the grant of licenses. Whatever income he has or profits he makes on the basis of the project, they belong to him.

There are only two limits to his exclusivity (or to the exclusivity of his licensee): first, the government may claim a license to satisfy specific public interests. This regards situations where a patentee may be subject to compulsory licensing in the public interest under general rules of patent law. So there must be evidence of a paramount public interest. Second, the grantee must tolerate—via the grant of a negative license—use of the project results for purposes of research and teaching. The expert group made a more limited exception: it required only a license to allow publicly funded R&D to go on (see No. 13.1 BNFT 98).

(ii) Responsibility for Protection and Exploitation

This autonomy of the grantee, which assimilates exploitation of publicly funded R&D to exploitation of R&D, for which he has paid himself, is counter-balanced by some rules of responsibility. The main responsibility is that the grantee has to see that the R&D results are actually transformed into an innovation. It is this responsibility which justifies the exclusivity. To this effect, the grantee, when applying for a grant, has to submit an exploitation or innovation plan which will limit the scope of his exclusivity, but which may be modified, narrowed down or extended as the project progresses. In fact, the grantee is under an indirect duty to update the innovation plan, or else he will forego part of his exclusivity.

Second, as part of his responsibility for the innovation, the grantee has to seek intellectual property protection for the project results in accordance with his own business judgment (and with the innovation plan). Similarly, he is held to limit the exclusivity of license grants in accordance with the actual needs of the licensee and of optimal exploitation (*e.g.,* by providing for field-of-use restrictions). The grantee should also provide for a termination

clause in case the licensee fails to satisfy the innovation requirement (just as the grantee may loose his own exclusivity if he does not live up to the innovation plan).

A particular problem of the grantee's responsibility for the innovation is posed by the question of whether the innovation has to be made in the domestic territory or whether innovation abroad suffices. The members of the expert group preparing the new rules were divided on this one point only. A preliminary question is whether projects should at all be supported if they are submitted on the basis of an innovation plan providing for innovation abroad. However, even if such projects are not admitted, innovation abroad may subsequently turn out to be the only possible way of innovation. Therefore, the rules provide for the possibility of a specific authorization, which may be made dependent upon the total or partial refund of the subsidy (No. 16.2 BNFT 98).

b) Equal Treatment of Public Research Organizations (PROs)

While the new rules were conceived from the perspective of public funding of industry projects, they also establish a most important principle, that of equal treatment of public research institutions with industry. This constitutes a major departure from the old rules which considered PROs to be altruistic suppliers of new knowledge, to be created in the interest of industry. Now PROs are considered to be equal players, and their interest in making money from their R&D projects is fully recognized. Whether the incentive will bear fruit, remains to be seen, but the rules have taken the necessary precautions.

It is true that PROs are entirely free to decide on how the project's results are used or exploited. However, they must show that they are actually able to meet the incentive and to use their autonomy of exploitation. They must show that they either have their own competent technology transfer office or that they are linked to an established technology transfer institution. Additionally, they must submit, just like industry, an innovation plan. They are held to take the necessary steps for patent protection of their results before they publish them. They are entitled to ownership of the results and to exclusive exploitation, *i.e.,* to the grant of exclusive licenses in accordance with the updated innovation plan.

The expert group that prepared the new rules also gave recommendations as to the precise mode of exclusive licensing (field-of-use-restrictions, right to termination in case of insufficient exploitation etc.). These recommendations include the licensing of scientific know-how (instrumentation, testing, etc.). In fact, these recommendations go back to another

expert group's recommendation from 1977, and they mirror a practice that experienced PROs have successfully practiced in the years since.

c) Some specific issues

(i) Collaborative Ventures

The new rules, like the old ones, plainly apply only to projects that are carried out individually by the grantee. However, in order to promote collaboration between science and industry in the interest of enhanced technology transfer and to achieve synergistic effects, many large projects now are funded in the form of collaborative ventures. These, in turn, raise particular problems regarding the ownership and the joint use or exploitation of the results. Simply applying the general rules to the relationship between the partners was a first approach, but wholly unsatisfactory. Partners must enjoy privileged relations. But it is far from easy to come to common terms between industry and academia as regards the use of background knowledge or the use of the foreground of the other partner. For one thing, industry tends to think that it should be exclusively entitled to exploit the joint results, preferably without even paying royalties to the PROs. On the other hand, PROs are handicapped as they can only exploit the results *via* licensing (rather than by manufacturing). Leaving them only the right to use their results for purposes of research, teaching and R&D contracting does not satisfy their interest. However, allowing them to license the result to a competitor of the industrial partner is equally not acceptable. The problem is further complicated by the circumstance that PROs generally have a poor bargaining position, unless they can contribute indispensable background knowledge. Mostly, however, they simply seek an opportunity to carry on their research.

In the end, the expert group recommended that partners of collaboration ventures should be totally free to negotiate the terms of their agreement. Making the funding ministry an arbiter between the parties had achieved no satisfactory results. The only control over the terms of the agreement are the rules of equity, of antitrust law, and the rules on subsidies provided for by the Treaty of Rome, establishing the EC. Indeed, collaborative ventures may not serve as a disguise for indirect subsidies flowing from PROs to industry. Therefore, unless the R&D contributions, including the contributions of background, are equal, some compensatory payment, in terms of market-oriented royalties, must be made when industry is using the joint results exclusively—at least if this is a *de jure* exclusivity. However, mostly this need not be, the exclusivity existing *de facto* anyway.

(ii) Exploitation of IPR by PROs; Inventions Made by Professors

A problem of current interest in Germany is the position of university professors under the general law of employee inventions (Sect. 42 Employee Invention Act). Generally speaking, researchers employed in PROs are subject to the general rules of employee inventions, therefore they own the invention, but except in cases of off-duty inventions, the employer is entitled to claim the invention. The employer must then have the invention patented, and may exploit the invention as it sees fit, subject to a duty to insure effective and efficient exploitation. However, the employer must remunerate the inventor-employee in accordance with the "monopoly" profits it makes (a deduction may be taken for the employer's own contribution to the invention in terms of providing the facilities, the intra-enterprise know-how etc.). The employee invention law does not apply to the principal executive officers of a corporation sitting on the board of directors, but it does apply to all senior management, and, consequently, also to the directors of PROs and their institutes.

University professors, however, enjoy a privilege. The inventions they make "as duty" belong to them, and are not subject to any claim by the employer, *i.e.,* the State to which the university belongs (99% of German universities are state universities). The reason for this privilege is to safeguard the academic freedom which professors enjoy, not only individually as persons, but also as a matter of their public office. Also universities are structured according to principles of academic autonomy and "self-administration," with professors having, for most practical purposes, and certainly for research purposes, the function and role of an employer.

The result of this privilege, however, is that inventions of university professors either go directly to industry—as in the case where the professor has a consulting agreement with an enterprise; this enterprise will then obtain full ownership and exclusivity—or the invention will most likely remain unexploited, as the professor generally will not risk his own money for patenting and exploitation. There are exceptions; he may, and not infrequently will, pass the invention on to a technology transfer institution such as the *Patentstelle der Deutschen Forschung*.

It is for this reason, as well as a general trend toward strengthening technology transfer by centralizing all related activities of a university at a university office of technology transfer, that the so-called "professor's privilege" recently came under heavy attack. The attack came from the universities, the ministries, and, to a certain extent, even from industry. This attack was all the more serious because the German employee invention law, in general, is considered to be too employee-friendly. Therefore it may

be subject to revision within the framework of European harmonization of intellectual property law.

However, two considerations may be put forth in favor of maintaining the alleged privilege, which really is the result of a public responsibility for freedom of academic research. One is that industry itself has come to realize the advantage it has from maintaining the privilege, namely direct and easy access to university inventions, rather than having to deal with a bureaucratic transfer office. In fact, the invention mostly likely will have been made within the framework of a broader project and industry needs both the invention and the general project knowledge. Second, if the university really has an efficient technology transfer office, then it may negotiate with the professor on access to and exploitation of his inventions. Such an approach would provide incentives to actually transform R&D results into inventions—a matter which, in any case, is out of control of the university unless it uses an incentive-based approach.

4. Problems of Technology Transfer Institutions

This brings me to the subject of technology transfer offices, which raises economic and societal rather than legal issues. Therefore, I shall be very brief on it.

In Germany, we have basically three kinds of technology transfer institutions, namely those linked to the science side, those linked to the side of industry, and some in between. We apparently have close to 1,000 of them and they share certain common features. First, they have a brokerage function rather than a direct transfer function. Second, they are mostly oriented toward supply push (in particular those on the science side) rather than toward demand pull, though there are one or two noteworthy exceptions (*Steinbeis-Stiftung; Niedersächsisches Technologie-Zentrum*). Finally, they are concerned more with *ex post* transfer (licensing) than with *ex ante* transfer (contract research and science/industry cooperation). Some of them have been successful, but only after many years of operation and due to having caught a goldfish; some of them are useful, but marginal; most of them only cost public money.

This is not to say that there is no successful transfer, for example, by institutions specializing in contract research (FhG), by big-science PROs with a clear industry orientation, by engineering institutions having consulting networks, etc. However, they all confirm the results of a recent, rather comprehensive study that found that technology transfer does not depend on transfer offices, but rather on direct contact between the transferor and the

transferee. It also found that technology transfer requires not only science to be willing and ready to transfer, but also industry is required to seek the transfer opportunities and to actually exploit them. That transfer is not a matter of licensing isolated inventions, except in very rare instances (or in pharmaceuticals), but a collaborative and reciprocal process of learning and teaching an entire, though specific and precisely defined technology. For all these reasons it depends on decentralization and on providing the necessary incentives.

III. THE EU-APPROACH

1. EU Science, Technology and Development Policy

a) Principles and Objectives

For a long time, the European Union has had a science and technology policy of its own, which took on some stature only with the well-known ESPRIT program in the late seventies, but now is well established. Its objectives and principles of operation are set forth in the Treaty (Art. 163 *et seq.*, Amsterdam-Version). These principles, which must be read in combination with those of the EU industrial policy in general (Art. 157), are to strengthen the scientific and technological bases of the Community, to encourage the development of the international competitiveness of its industry, and to support all research which the well-being of the Community requires. To this end, the Community supports enterprises throughout the Community, including small and medium sized enterprises, its research centers and universities in their efforts for high quality research, and, in particular, in their cooperation with a view to fully use the benefits of the Internal Market.

This means that the Community's science and technology policy really serves three purposes: strengthening of international competitiveness, improved integration of national markets and industries, and maintenance or establishment of internal cohesion, for example, of small and large industry in the various regions of the Community. In all of these respects, PROs have only a supporting role to play. Their research is not supported for its own sake, but with a view to achieve these goals.

b) The 5th Framework Programmes

The Community's science and technology policy operates according to two different principles. On the one hand, the Community is entrusted with the coordination of the research and technology policies of Member States,

with a view to ensure the coherence among the various national policies, and among the national policies, with the policy of the Community (Art. 165). On the other hand, and this is the much more important activity, the Community carries out its own R&D programmes on the basis of common funding out of the Community's budget. To this effect the Community sets up pluriannual, so-called "framework programmes" which determine the scientific and technological goals of its policy, as well as the priorities and general principles of operation, and the overall budget. At the moment we are at the 5th Framework Programme (O.J.E.C. 1999 L 26, 1), providing for R&D expenses of about $14 billion for the period of 1998–2002. However, compared to the total of national R&D budgets of all Member States, this is only a small amount, about 5%. The framework programme is then implemented by specific programmes fixing the precise themes and projects of R&D such as development of user-friendly information; energy, environment and sustainable growth etc., mostly by grouping them into "priority actions." These specific programmes are elaborated on with the assistance of expert advisory groups. However, the principal objectives, themes and allocation of budgets are determined politically, *i.e.,* upon the initiative of the Commission by the Council and the Parliament, in what is called the co-decision procedure.

c) Modes of Operation

(i) Direct and Indirect Actions

The specific programmes are executed by either direct or indirect actions, meaning that the Community may either carry out a project itself in its Joint Research Center, formerly the Joint Nuclear Research Center at Ispra, for which new business had to be found. Alternatively, the Community may carry out the project extramurally, namely by enterprises or public research institutions of Member States. In case the Community has associated other countries to an R&D programme by international agreement (Art. 170), enterprises or PROs domiciled in these countries may participate equally. To carry out projects, firms or PROs are selected in an open granting/tendering procedure, *i.e.,* potential grantees submit a proposal for a particular project they have defined according to the specifications of the specific programme. Financing of the project normally is 50%, but may be less according to the nature of the project; for example, mere demonstration projects are financed only up to 35% of eligible costs (see annex IV, 5th FW-Programme).

(ii) Transnational Collaborative Ventures

The most characteristic feature of the indirect actions of the EU's Science and Technology Policy is that it has to be carried out in collaborative form by at least two independent enterprises or PROs from different Member States (Art. 4 Council Decision 1999/65 IEC, laying down the basic rules on participation and on dissemination of the R&D results, O.J.E.C. 1999 L 26, 46). This requirement is intended to promote the objectives of market integration and cohesion, as well as to achieve increased synergy and technology transfer. It means that enterprises and PROs from various Member States must first find each other before they can submit a proposal for project funding, and they have to agree on the terms of their collaboration, *i.e.,* the division of their joint work, on delegation of staff, etc. This they do in a consortium agreement, but they may also subdivide the work by sub-contracts, and they may associate other enterprises or PROs to their project. So the legal structure may become rather complicated.

At any rate, these collaborative projects must be distinguished from specific projects for small and medium sized enterprises associating the user of the R&D results. These specific projects may be carried out by "cooperative research projects" enjoying a particular status under the funding rules (see Art. 5 II lit b Council Decision 1999/65).

As regards legal technique, the consortium agreement for collaborative ventures is a matter only of defining the relationship between the parties. In addition, a contract must be concluded by the consortium with the Community, wherein the rights and obligations of the parties *vis-á-vis* the Community are determined. The Community considers that the projects carried out as indirect actions are not simply subsidized R&D projects of the firms, but constitute contract research that entails duties to supply, so-called deliverables, in the form of reports and documents on the R&D results. The Court of Justice has, on several occasions, held the parties to these duties. Until now, however, breach of such duties has only resulted in an obligation to refund the payments made by the Community, not in an obligation to pay damages. Still, what it means is that participants may not simply abandon the project, and that they must justify any failure by showing that they met their duty of care. The purpose of the obligation of contract performance, however, is not to satisfy the Community's interest in actually obtaining the "deliverables" for its own use, but to ensure the execution of the programme as a way to enhance general industrial competitiveness. Therefore, there is no contradiction between this obligation of performance and the fact that the R&D results belong to the project participants.

2. Rules on Ownership, Exploitation and Dissemination of R&D Results

a) Principles

Art. 164 EU-Treaty provides indeed, that the Community must determine the principles of dissemination and of exploitation for Community Science, Technology and Development Policy. This is done by Art. 13 *et seq.* Council Decision 1996/65, relating to the rules on participation of enterprises, research centers and universities (O.J.E.C. 1999 L 26, 46). These rules are implemented by Commission Regulation No. 996/1999 of May 11, 1999 (O.J.E.C. 1999 L 122, 9). They are based on: a distinction between ownership of the results, their use by the owner or on its behalf, use by third parties on the basis of so-called access rights, *i.e.,* for practical purposes mostly licenses, including know-how licenses, and dissemination of the results through publication. The regulation of all of these matters then depends upon the rate of the financial contribution of the Community to a project, and on whether the project is, as is usually the case, a collaborative venture or, exceptionally, an individual undertaking.

(i) Attribution of IPR

Ownership of the results vests with the Community if it bears all the project costs. This it does either in case of a direct action, such as R&D by its Joint Research Center, or in case of an indirect action if it assumes all costs, such as for studies accompanying or preparing a specific program. However, normally the Community does not fund more than 50% of eligible costs, and then ownership of the results remains with the enterprises or the PROs carrying out the project (Art. 15 Dec. 1999/65). In the case of collaborative ventures, participants must agree among themselves on allocation of the results (Art. 18 Commission Reg. 996/1999).

(ii) Requirement of Use

Ownership of the results carries with it an obligation to use the results (Art. 17 Council Dec. 1999/65; Art. 22 Reg. 996/1999). This obligation may be complied with either by the owner himself, for example by manufacturing, or by having third parties use the results, for example through licensing, which is the only way for the Community to use its own results. Meaningful use or exploitation of the results requires that they be adequately and effectively protected (Art. 16 Council Dec. 1999/65, Art. 21 Reg. 996/1999). The scope of both the obligation of use and the appropriate

form of protection have to be detailed in a technology implementation plan which applicants for project funding have to submit together with their application (Art. 20 Council Dec. 1999/65, Art. 38 *et seq.* Reg. 996/1999). This technology implementation plan must detail the way and the time limits of exploitation as forecasted by the applicants, it must be approved by the Commission, and it may not be modified without good and substantiated reason.

In principle, non-compliance with the obligation of use or of exploitation may be sanctioned by a duty to refund the financial contribution of the Community. This, however, has not yet been claimed, and it will be difficult to claim. The normal sanction, therefore, is that the grantee must disseminate the results of the project through publication (Art. 17 II Council Dec. 1999/65; Art. 22 II Reg. 996/1999). One may doubt whether this is a very effective sanction.

(iii) Access Rights

A more problematic, but in practice not the most problematic, issue is that of granting rights of access to the project results to third parties. In principle, knowledge that has been acquired on the basis of a direct action by the Community, as well as all information necessary for its exploitation, should be made available to any legal person domiciled within the Community (Art. 18 I Council Dec. 1999/65). However, this principle applies to direct actions only. In the case of indirect actions, a distinction is made between access rights that project partners must grant to each other and the rights of access of third parties not participating in the project. Whereas partners should have full access, provided such access is not in conflict with the legitimate business interests of the other partners, third parties may obtain access only in accordance with Community interests, the rate of Community financing, the nature of the R&D activities in question, and the proximity of the project to exploitation in the market (Art. 18 Council Dec. 1999/65).

A brief glance at Art. 24 *et seq.* of the implementing Reg. 996/1999, however, reveals that the question is much more complicated than that. Leaving aside the distinction between the various kinds of projects, and focusing only on the most common type, the collaborative R&D project, further distinctions are necessary.

First, according to Art. 25, project partners may regulate access rights by agreement. This agreement takes precedence, to the extent that it is more favorable to all parties than the minimum rules provided for by the regulation. However, what is meant by the terms "more favorable" or "non-

conflicting rights"? For example, access rights are ambivalent: more access for one partner may mean less autonomy for the other.

Second, access rights to the use of R&D results for the execution of the project, such as for project R&D, must be distinguished from access rights for the exploitation of project results (see Art. 26 v. Art. 30 *et seq.*). In the former respect, the principle is for full and free access, on a need-to-know basis, to all knowledge resulting from the project, such as foreground knowledge (again leaving aside fine distinctions between principal and assistant contractors). Note, however, that access rights may also exist with respect to the R&D of other projects from the same specific programme (Art. 26 III). In regard to background knowledge, royalties may be required for access on preferential terms (Art. 26 III Reg. 996/1999).

In regard to rights of access for exploitation, Art. 30 *et seq.* Reg. 996/1999 sets forth even more complicated rules, but two basic principles apply. First, access rights should not be granted on an exclusive basis as this would block all other exploitation, but exceptions are admitted and may become the rule (Art. 30 I). At any rate, participants in a collaborative venture may block the grant of exclusive rights to third parties by promising exploitation on a non-exclusive basis (Art. 30 II). Second, access rights may be refused on the ground that they would impair exploitation by the owner himself (Art. 31). If, however, access rights are available, then Art. 32 again distinguishes between, first, foreground (royalty-free) and background (favorable terms) knowledge, second, principal and assistant contractors and, third, the results of the collaborative venture and the results of other ventures from the same specific program (Art. 32).

b) The Model Contract for RTD-Projects

(i) General Structure

The above-mentioned rules of Reg. 996/1999 mirror the former practice of model contracts which applicants had to subscribe to when requesting Community financing of their R&D project. The contracts, however, have been simplified. Previously, additional distinctions had been made in regard to access to knowledge generated under related programs and the access rights of enterprises from associated countries or third countries. Apparently, all of these distinctions have been abandoned, as well as the right of access of third parties in general. Formerly, third parties did have access rights, but they were subject to a broad reservation made in favor of the commercial interests of contractors, so that they were probably never available in actual practice. Thus, the new rules only confirm the

exclusivity of use by group members that had always existed *de facto*. Nevertheless, this change is noteworthy as a change of principle. Third party licensing is now left to the autonomous business decisions of grantees. It may become mandatory only as a matter of the obligation to put the R&D results to use.

(ii) Position of Industry Participants

This contrasts sharply with the position PROs have been accorded, formerly by the Model Contract, which has been confirmed by Art. 32 para II Reg. 996/1999 as well as by the new Model Contract (which is still in preparation). It is true that, unlike other contractors, they may ask royalties for granting access rights to other contractors, which is plainly legitimate in view of their inability to exploit the rights other than by licensing. However, they are neither free to set royalties according to market conditions nor may they block the use of their rights until agreement on the royalties has been reached. Rather, royalties must be "reasonable" and acceptable in relation to their contribution, and negotiations may not halt the use of their rights. This plainly is in conflict with the very function and purpose of intellectual property rights, which convey the exclusivity as a lever to negotiate market-related royalties.

(iii) Position of PROs

It also degrades PROs to a merely supporting role. Such refusal to afford proper incentives for the creation of marketable knowledge by PROs contrasts clearly with the permanent complaints about the ivory-tower approach of PROs to R&D. Moreover, it is in conflict with the new policy of both the Member States and of the Community to allow PROs to claim patenting costs as eligible costs under their general R&D programs, or even to set aside a certain amount of overall project funds for patenting costs. This is both a necessary and a praiseworthy step, that should not be frustrated in its effect by undermining the very meaning of the exclusivity.

3. International Scientific Cooperation

The European Union is an active participant in international scientific cooperation in a variety of forms. One is to associate other countries to the Community's RTD policies by international agreement. The applicable rules then are essentially those that generally govern the Community's own RTD projects, though there may be some modifications. Another form is

represented by separate cooperation agreements, which are either framework agreements covering a broad range of R&D topics to be determined by the Contracting States or thematic agreements relating to specific areas of R&D such as, for example, intelligent manufacturing systems. In both cases the agreement will have an annex providing for specific rules on intellectual property. In principle, these agreements only set a framework for cooperation of the participants of a project falling within the ambit of the agreement, setting forth rules on the rights to use pre-existing and new knowledge, etc. They also control the position PROs may have under the agreement, not always to their advantage.

My purpose is not to discuss these agreements in any detail, but simply to attract attention to the subject. From a first glance at such agreements, I get the impression that they need further study, and this is precisely what I would like to suggest for one of the next High Technology Summits of CASRIP.

IV. CONCLUDING REMARKS

I am very grateful to CASRIP, and to Professor Toshiko Takenaka in particular, for the invitation to Seattle, and for all the great hospitality I have enjoyed during my stay here. Sharing my thoughts with you has been both an honor and a great pleasure. I thank you ever so much for your attention.

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