

Guideline

for the Protection and Utilisation of Intellectual Property

at Heinrich Heine University Düsseldorf

The following guideline for managing intellectual property is embedded in HHU's transfer strategy. It specifies the measures for achieving the strategic goal of "tapping the University-wide exploitation potential."

The principles, concrete decision-making criteria, as well as clear-cut and standardised rules for action formulated in this guideline are intended to lead to greater transparency and predictability in the protection and utilisation of intellectual property for HHU researchers, scientists, university administration, and the interested public. It also enables the University to use its resources economically. In doing so, HHU aims to refinance its patenting expenses through utilisation from licensing and sales.

The Research and Transfer Department is responsible for implementing patent and know-how-related transfer measures and for protecting intellectual property at HHU, in close coordination with the Vice President for Research and Transfer. In the process, it collaborates closely with a patent commercialisation agency (currently PROvendis GmbH, patent commercialisation agency for higher education institutions in NRW). HHU's start-up-related activities, which generally require a transfer of knowledge between the University and companies, are bundled into CEDUS (Centre for Entrepreneurship Düsseldorf).

Intellectual property is defined as intangible assets that constitute an exclusive right. These include registered patents, utility models, designs, trademarks, know-how and copyrighted works. Patents are *officially registered intellectual property rights* and, along with utility models, designs and trademarks, are referred to as "industrial property rights."

Thematic focus in this guideline is on the registration and utilisation of patents as well as the know-how generated in research at HHU.

Patents help to promote a society's technological and economic progress. Through the protection of intellectual property, the applicant for a patent acquires the monopoly right to the invention. He/she is rewarded for the invention by a prohibitive right, which is intended to prevent possible imitations: Third parties are forbidden from commercially using, offering, importing or manufacturing the invention themselves. The public is informed about the very latest state of technology by disclosing the patent specification.

Patents contribute towards safeguarding findings from research that can be used in collaborations between science and industry. In addition, if they are exclusively available, they bolster the competitiveness of spin-offs from science. They are granted for inventions in all fields of technology and should fulfil the following three criteria: they must be new, be based on an inventive activity and be industrially applicable.

Know-how, on the other hand, translates into *non-registered*, practical knowledge which is secret and essential for the production or development of a commodity. It often complements the subject matter of an invention that is already protected.

1) Inventions and patents in the context of self-financed research and for third-party funded public projects

In order to achieve the broadest possible awareness of the protection of intellectual property, the Research and Transfer Department at HHU offers sound on-site advice and regular seminars, workshops and information events. The aim is to provide scientists with the best possible support in questions about intellectual property rights, especially with regard to potential collaborations with industrial companies or other research institutions. First and foremost, this includes the exchange and transfer of basic knowledge of industrial property rights with focus on inventions and patents. The following topics are therefore dealt with in greater depth during information events for scientists: general and subject-specific criteria for patentability (e.g. biotechnological inventions or software inventions), employee inventors' rights, research methods, the differentiation between industrial property protection and copyright law, the utilisation of know-how, the contractual structure of third-party projects relevant to industrial property rights, the University's internal transfer strategy and other support services. In this context, information on start-up promotion and planning for patent-based business start-ups is integrated into the consultations or events as needed.

a) Invention disclosures

HHU employees are obligated to report inventions to their employer in accordance with the Employees' Invention Act (Section 5 ArbznErfG). Ever since the abolition of the university teacher/lecturer privilege in 2002, it is no longer possible for university employees to apply for patents for service inventions on their own - unless the inventions are released by HHU. It is also possible to transfer an existing patent application back to the inventor.

For this reason, the Research and Transfer Department offers each inventor individual consultation on intellectual property regulations and utilisation processes prior to the submission of the invention disclosure and patent application based on it, and provides information sheets.

The invention disclosure is then submitted by using a standardised form provided on the intranet. After the invention disclosure has been submitted, it is reviewed by the Research and Transfer Department according to the following criteria:

- formal completeness of the notification,
- inventor status (independent inventor; employee inventor),
- invention status (idea; experiment; sample; prototype),
- invention context (externally funded project; regular employment; secondary employment),
- detrimental to novelty (prior publications before patent application),
- contractual embedding (for example, applicable regulations in R&D contracts).

At the same time, when the invention disclosure is submitted, an individual commercialisation roadmap is outlined together with all parties involved (see sample commercialisation roadmap in the appendix), which should ensure an optimal patenting and utilisation process for HHU and the inventors.

b) Claiming and releasing inventions

If the invention was created within the scope of an ongoing third-party funded project with an industrial company, the contractually stipulated conditions of the project for utilisation and, if applicable, transfer of the rights to the invention are complied with. It is therefore important that inventors already refer to existing agreements with third parties in the invention disclosure.

In the case of inventions within the scope of regular research activities as well as within the scope of start-up projects or public third-party funded projects, a decision is made – after careful consideration of the advantages and disadvantages – on the claiming/release of HHU's rights to the invention to the inventor. The basis for this is usually the opinion of the

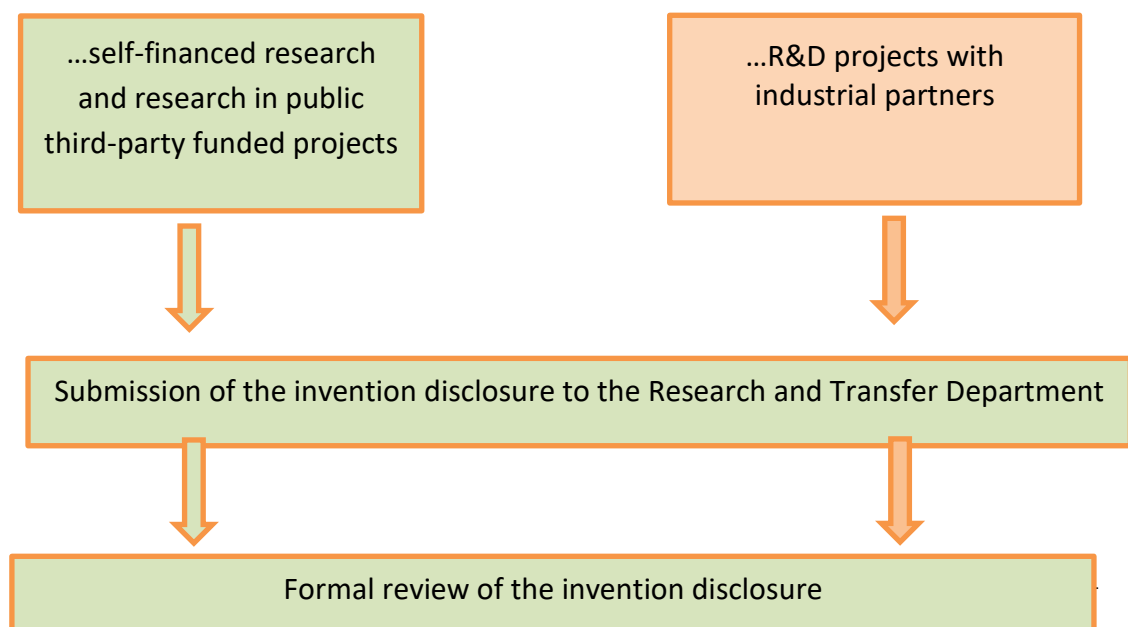
Patent Commercialisation Agency (PVA). Its task is to review the content of inventions: Examination criteria are the patentability and chances of commercialising the inventions (for example through licensing, sale in the patent-relevant market). As a result, the PVA sends the Research and Transfer Department an opinion with a recommendation for utilisation or release. For start-up projects, coordination takes place with CEDUS.

As a general rule, HHU's Rectorate follows the PVA's opinion. If inconsistencies in content are identified, the Research and Transfer Department presents the facts of the case to the Vice President for Research and Transfer and a specialist expert from the subject area relevant to the invention. The final decision on the claiming or release of an invention is formally made by the Vice President for Research and Transfer on behalf of the Rectorate within a period of four months. If the inventor has already indicated an intention to publish in the invention disclosure, the decision will be made within two months if possible.

In the event that HHU claims the rights to the invention, a binding commercialisation roadmap (see sample commercialisation roadmap in the appendix) is agreed as a guideline for action for all parties involved (usually inventors, Research and Transfer Department, PVA). In this roadmap, the individual work packages for the further development of the invention as well as the time schedule are defined. The process of patenting and utilisation, including the expected costs, is compared to this. The regular review of the commercialisation roadmap along the documented milestones thus forms the basis for further decisions regarding discontinuing or continuing intellectual property rights and utilisation activities.

From Invention to Utilisation - Process at HHU

Inventions from ...





Claiming the rights to the invention

Application for property rights and utilisation by HHU/PVA

c) Patentability and general utilisation perspective

Inventions with very good patenting and utilisation prospects that were created during self-financed research or in a public third-party funded project are filed for a patent by HHU and the costs are borne by the University and the participating institutes (for details see 1) h) Financial regulations). HHU places special emphasis on the promotion of start-up-related patenting projects. Only inventions that promise to fulfil the criteria for patentability after initial review, whose further development towards marketability by the inventors or a company is guaranteed, and for which an attractive sales market exists or can emerge, are applied for a patent.

d) General principles for the sale or licensing of intellectual property rights

HHU's decision to sell or license intellectual property rights (here: patents) and/or know-how depends on a number of individual factors that must be clarified with the company at the beginning of the contract negotiations, for example:

- Importance of intellectual property rights and know-how,
- Potential economic commercialisation of these rights,
- Number of potential fields of application of these rights,
- Need for further research and estimated development costs until the product is ready-to-market,
- Costs of filing and maintaining intellectual property rights,
- Possibility for HHU to bear these costs itself,
- Financial performance capability of the contractual partners,
- Possibility of use for spin-off from HHU.

Insofar as HHU has not already committed itself in advance to the transfer of any intellectual property rights and/or know-how to the contractual partners, the sale of these rights by way of licensing analogy is preferred (exception: utilisation through HHU's spin-offs, see 1) f) Utilisation perspective start-up). Since HHU aims to generate additional income within the framework of the economic utilisation of the rights, it will, in case of doubt, select as contractual partners those interested parties who are economically most efficient and are likely to ensure the best economic utilisation of the rights.

With regard to contract design, the following premises apply to HHU:

- Sale by way of licence analogy before licensing (exception: utilisation through HHU's spin-offs, see 1) f) Utilisation perspective spin-offs),
- For sale by way of licence analogy: purchase price that is customary in the market or milestone payments customary in the market, possibly reimbursement of costs already incurred for filing and maintaining the property right,
- In the case of licensing: possible one-off payment, minimum licence fee, ongoing turnover licence fee, possible reimbursement of patent application and maintenance costs already incurred, clear termination options, amongst others, when certain turnover figures are not achieved,
- For intellectual property rights with potentially multiple fields of use: avoid granting exclusive licences without limiting them to a specific field of use as far as possible,
- HHU reserves at least one right of use in research and teaching for non-commercial purposes,
- Scientific publications are only published after they have been reviewed for patentability.

e) Utilisation perspective industry

As a general rule, patentable and utilisable inventions from the life sciences are initially filed as EP applications (European patent applications) by HHU. For inventions from other technical fields, a German or EP application is filed, depending on the possible target markets. Internationalisation of this application in the form of a PCT procedure (PCT = Patent Cooperation Treaty) is only initiated if there are good prospects for commercialisation (for example, several expressions of interest from industrial partners, possibly already existing letters of intent, etc.). Costs for the PCT application and subsequent nationalisation and regionalisation are borne by HHU, with 50% of the funds being provided from the central patenting budget and a further 50% from the participating institutes. The University will not pursue the patents in the event of unpromising utilisation activities or if the Patent Office's examination reports find fault with the patents. Should the participating institutes not be able to raise the proportionate funding, they will also refrain from pursuing the intellectual property rights. HHU is the owner of the property rights.

Successful exploitation to industrial companies involves the use of the model licence and patent sale agreements (provided by the Research and Transfer Department), in which the use of inventions by companies or a sale at standard market conditions is agreed. HHU prioritises the sale of intellectual property rights by way of licence analogy. In contrast to licensing to third parties, in the case of sales all rights and obligations are transferred to the buyers, who in turn bear the future costs of the intellectual property right. For sales by way of a licence analogy, the purchase price is a one-off payment with subsequent revenue payments after fixed milestones have been reached (for details see "1) d) General principles for the sale or licensing of intellectual property rights"). Revenue from the commercialisation of a patent is split up according to the financial regulations in 1) h).

f) Utilisation perspective spin-offs

For promising HHU spin-offs, the costs of initial patent applications relevant to the start-up are covered by HHU. The Research and Transfer Department regularly exchanges information with CEDUS on the status quo of the spin-off project. Half of the costs for the PCT application and the resulting nationalisation and regionalisation are borne by HHU from the patenting budget and half by the participating HHU institutes. 30 months after the initial priority-establishing application of an invention, the nationalisation/regionalisation of the PCT application is next on the agenda. If HHU continues to pursue the application, costs for this continuation of the patent granting procedure before the national patent offices are also financed in equal parts from HHU's patenting budget and the participating institutes.

At a point in time defined in the commercialisation roadmap, the patent portfolio is made available to the company for economic use. With the involvement of CEDUS, the three options preferred by HHU will first be selected: 1. granting of an exclusive licence for the patent

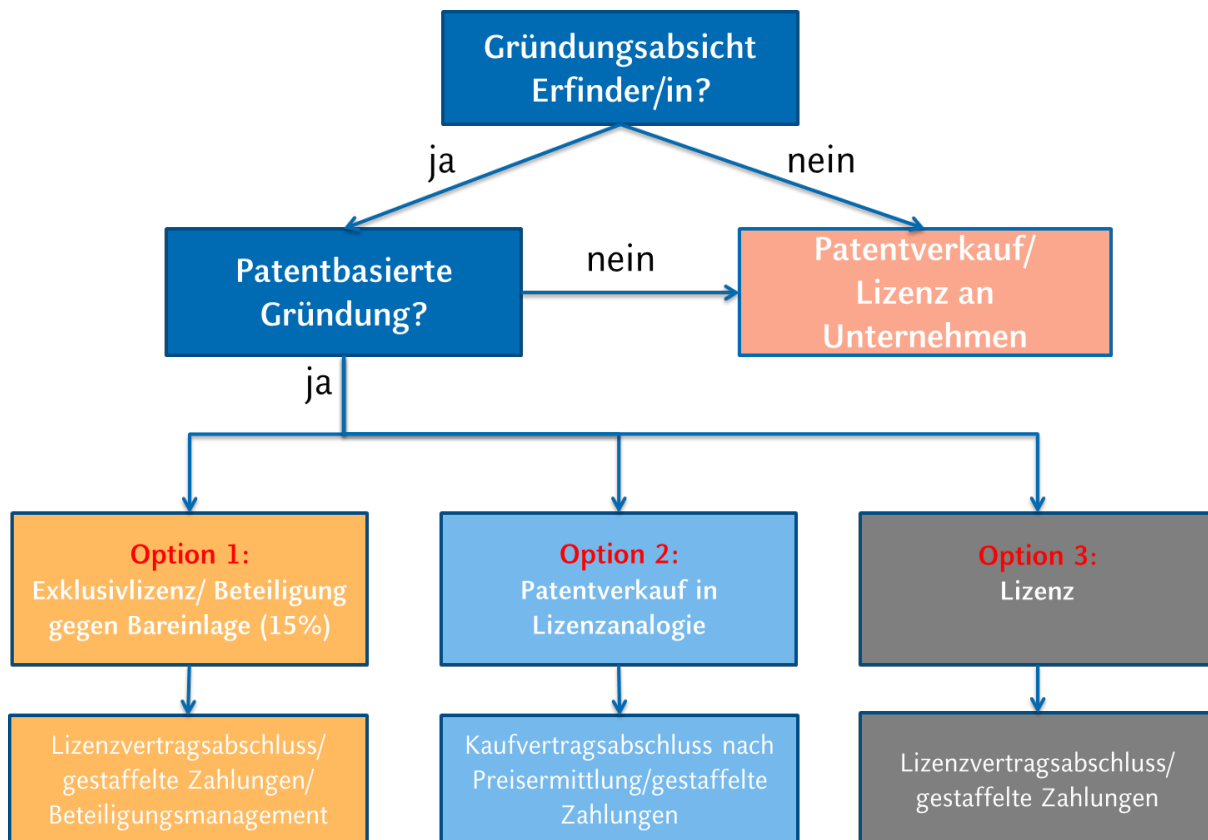
portfolio with simultaneous participation in the company by means of a capital contribution in cash of up to 15% through technology transfer Heinrich Heine University (TTHU) GmbH. 2. sale of a patent by way of licence analogy. 3. granting of a licence for the patent portfolio. Subsequently, the Research and Transfer Department, with participation of TTHU GmbH in the first option, enters into negotiations with the founders with the preferred option in order to arrive at the best possible solution for both sides.

In the event that the spin-off declares insolvency, the patent portfolio is maintained for options 1 and 3 and is not added to the insolvency estate, as HHU continues to act as the owner of the property rights.

In principle, the following applies: If the company founded takes over the continuation of all property rights and the costs at a specific point in time, it will be appointed as the holder of the rights; if the patents continue to be financed from public funds, HHU will remain the holder of the rights.

If intellectual property, e.g. an HHU patent, is intended as the basis for a start-up, it is important that HHU is informed about the status quo of the start-up. Founders for whom HHU files patent applications therefore exchange information at regular intervals – coupled with the exits defined in the commercialisation roadmap - with employees of the Research and Transfer Department about the current status of the start-up process and patenting status.

Translation of embedded text: Inventor's intention to start-up a business? Patent-based start-up? Patent sale/licence to company, exclusive licence/participation against cash contribution, patent sale by way of license analogy, licence, conclusion of licence agreement/staggered payments/participation management, conclusion of purchase agreement after price determination/staggered payments, conclusion of licence agreement/staggered payments



g) Inventor status and willingness to cooperate

In order to implement the utilisation of intellectual property and know-how in a comprehensible way for scientists, it is important that intensive consultations take place beforehand on contractual, property rights, formal, procedural and, if necessary, start-up-related framework conditions. In doing so, the Research and Transfer Department attaches great importance to personal contact and on-site assessment of inventions/know-how or research results.

HHU strives for a good and trusting cooperation between the players involved: Research and Transfer Department, PVA and CEDUS. This includes, for example, inventors providing scientific content for the preparation of a patent application and being available for queries in the case of interests in use by commercial enterprises. It is important that current information on the invention (for example, further development of the invention) is brought to the attention of the Research and Transfer Department and that it remains informed about the current status of the persons involved (e.g. change of employer). The Research and Transfer Department, together with the PVA, provides the inventors with all relevant patent documents and informs them regularly about the patenting process. The individual commercialisation roadmap established together with HHU should be clearly followed by all participants. If the milestones are not reached, HHU reserves the right to refrain from maintaining the patents (see sample commercialisation roadmap in the appendix).

h) Financial regulations

HHU bears all costs for the first application within the framework of its annually determined patenting budget. For all subsequent applications, 50% of the patenting costs are covered from funds of the participating institutes. The inventors of HHU receive a 30% share of the potential utilisation proceeds before deduction of expenses, in accordance with the statutory provision (Section 42 No. 4 of the Employees' Invention Act (ArbnErfG)). PVA receives 15% of the total utilisation revenue (if the agency is involved in the respective case), and 55% of the revenue remains with HHU for further financing of patents.

i) Exits to the relinquishment of property rights

HHU reserves the right to discontinue patent applications if the prospect of utilisation is negative, no further development by the inventors takes place or the likelihood of a patent being granted is in question, for example due to negative research or examination reports from the patent offices. Decisions on the continuation of property rights are made by the Vice President for Research and Transfer in a timely manner before further costs are incurred: Before the end of the first year of the application (before the end of the priority year), 30 months after the first application (before entry into the nationalisation or regionalisation phase), before requests for researches or examination requests and when annual fees are due (see sample commercialisation roadmap in the appendix).

2) Protection and utilisation of intellectual property in the context of non-economic and economic contracts with third parties

The transfer of knowledge and technology resulting from cooperation with non-university partners is a statutory responsibility (Section 3, para. 1 of the Higher Education Law for North Rhine-Westphalia ((HG NRW)). HHU reports to the public on the fulfilment of this task in its annual report.

In principle, the following applies to all projects with third parties (companies and research institutions): The projects require a contract which, in addition to the description of the project content, regulates the costs as well as the handling and utilisation of the results produced, the know-how generated and the intellectual property. The following premises should apply in this contract:

- The freedom of research and teaching must not be adversely affected.
- The freedom of publication of the scientists involved in the project must be maintained. Exceptions require justification.

- HHU's intellectual property, in particular in the utilisation of patents, shall be protected with due regard to the statutory provisions.

In order to ensure the successful transfer of research results, comprehensive advice and support in the preparation of funding applications, the patenting of research results and the negotiation of contracts is a key prerequisite. The Research and Transfer Department professionally supports its scientists in this regard: advice on funding applications is provided, sample contracts and text modules are made available and, if necessary, contract negotiations are conducted.

a) Collaborative research/cooperations

In this form of collaboration between several jointly researching partners (HHU, research institutions, companies), which is mostly in the area of basic research, the following utilisation principles apply:

- HHU is the owner of the intellectual property rights that arise in the course of a research project at HHU.
- In the case of jointly developed intellectual property rights, HHU shall enter into a separate agreement with the other contractual partners on possible application, bearing of costs and use.
- The contractual partners shall grant each other a non-exclusive, royalty-free right of use, if required and exclusively for the purposes and duration of the joint or cooperation project, to intellectual property rights which already exist at the start of the joint or cooperation project or which arise within the framework of the project and are required by the other contractual partners for implementation of the project.
- Any subsequent transfer or use of HHU's intellectual property rights shall be carried out in accordance with the provisions of EU state aid law (currently Art. 107 et seq. TFEU and the "EU Framework for State Aid for Research, Development and Innovation 2014/C 198/01") in a separate written agreement at standard market conditions. A gratuitous transfer of HHU's intellectual property rights to companies constitutes an impermissible subsidy and is therefore not possible.
- HHU is also entitled - with the necessary restrictions - to publish all results generated during implementation of the project in the usual scientific form and to use them in research and teaching. The restriction here is to ensure the proper implementation of patent applications and the protection of trade secrets.

b) Contract research

The following utilisation principles apply to the services commissioned by the contracting company within the framework of a research and development contract:

- The company contracting the research pays HHU remuneration in line with standard market conditions including an appropriate rate of return.
- Results of the research work are transferred to the company, with the exception of the inventions created within the scope of the provision of services on the part of HHU.
- These inventions will - if requested by the company - be used by HHU within the scope of its legal possibilities according to the Employees' Invention Act (ArbnErfG) and transferred to the company in a separate written agreement at standard market conditions in accordance with the above-mentioned regulations on EU state aid law. Gratuitous transfer of HHU's intellectual property rights to companies also constitutes an inadmissible subsidy here and is therefore not possible.
- In the event of commercial utilisation of the transferred inventions by the company, an additional remuneration for HHU in line with standard market conditions shall be agreed.
- Intellectual property rights already held by HHU are priced into the remuneration depending on the type, duration and scope of their use for the company's purposes; if the company uses these rights beyond the duration of the contract research agreement, the company only receives a limited right of use.
- HHU is also entitled - with the necessary restrictions - to publish all results generated during implementation of the project in the usual scientific form and to use them in research and teaching. Here, too, the restriction is to ensure the proper implementation of patent applications and the protection of trade secrets.

c) Services according to the latest state of technology

In the case of HHU services contracted by companies that are not related to research, the following utilisation principles apply:

- The results (mostly measurement or analysis data to which no intellectual property rights can be established) are made available to the company after payment of the agreed standard market remuneration.
- HHU is entitled - with the necessary restrictions - to publish all results generated during implementation of the project in the scientifically customary form and to use them in research and teaching. A restriction here is to also ensure proper implementation of patent applications and the protection of trade secrets.

Entry into force

This guideline came into force on 29 September 2016 by HHU's Rectorate's resolution and was amended by the Rectorate's resolution of 27 April 2017.

Glossary

European patent application (EP application)

A European patent application is subject to an application and grant procedure. The patent is applied for centrally at the European Patent Office (official languages are German, English and French), reviewed and later granted where appropriate. When granted, the application is divided into national patents. All countries that have joined the European Patent Convention (EPC) are automatically designated when the application is submitted. The selection of countries can still be limited until the grant has been given.

Inventor

In this guideline, inventors are defined as HHU employees within the meaning of the Employees' Invention Act (ArbnErfG) whose scientific work has led to an invention. Excluded are: guest lecturers, scholarship holders, students, doctoral students and, where applicable, other persons who are not employed by or who do not work as civil servants of HHU. However, the aforementioned groups of persons have the option of transferring their rights to HHU and being treated in the same way as an employee inventor.

Invention

An invention is technical teaching for systematic, scheduled action using controllable natural forces to achieve a causally transparent, foreseeable success. It is distinguished from a mere "discovery". Inventions do NOT include, for example, scientific theories, mathematical methodologies, business activities, the mere reproduction of information or even plans, rules, procedures for intellectual activities and programmes for data processing systems. For the purposes of this guideline, inventions are service inventions of employees of the University

which are created within the scope of their official activities/tasks or which are based on the University's experience/work.

Intellectual property

Intellectual property comprises intellectual creations or intangible goods (for example inventions or works of art) that constitute an exclusive right. An exclusive right excludes others from using it. Intellectual property typically subsumes the two categories "industrial property rights" and "copyright law".

Industrial property rights

Industrial property rights include officially registered and researchable rights such as the patent, the utility model, the trademark, the design (registered design), topography protection (for semiconductors) and plant variety protection (for plants).

Know-how

Know-how is understood as the totality of practical knowledge gained through experience and experimentation which is secret and essential (of importance for production). It must be identifiable in terms of the two characteristics mentioned.

Patent

A patent is a property right in a field of technology which must fulfil the criteria of novelty, inventive activity and industrial applicability. It is a right to prohibit third parties from using, offering, placing on the market, manufacturing, importing or owning the protected technical object or procedure.

PCT procedure (PCT application)

The PCT procedure (PCT = Patent Cooperation Treaty) is a central application and research procedure for all contracting states of the PCT worldwide. The procedure is usually initiated one year after a priority-establishing first application. The application is based on the very latest state of technology of the first application.