

Patent Evaluation and Exploitation

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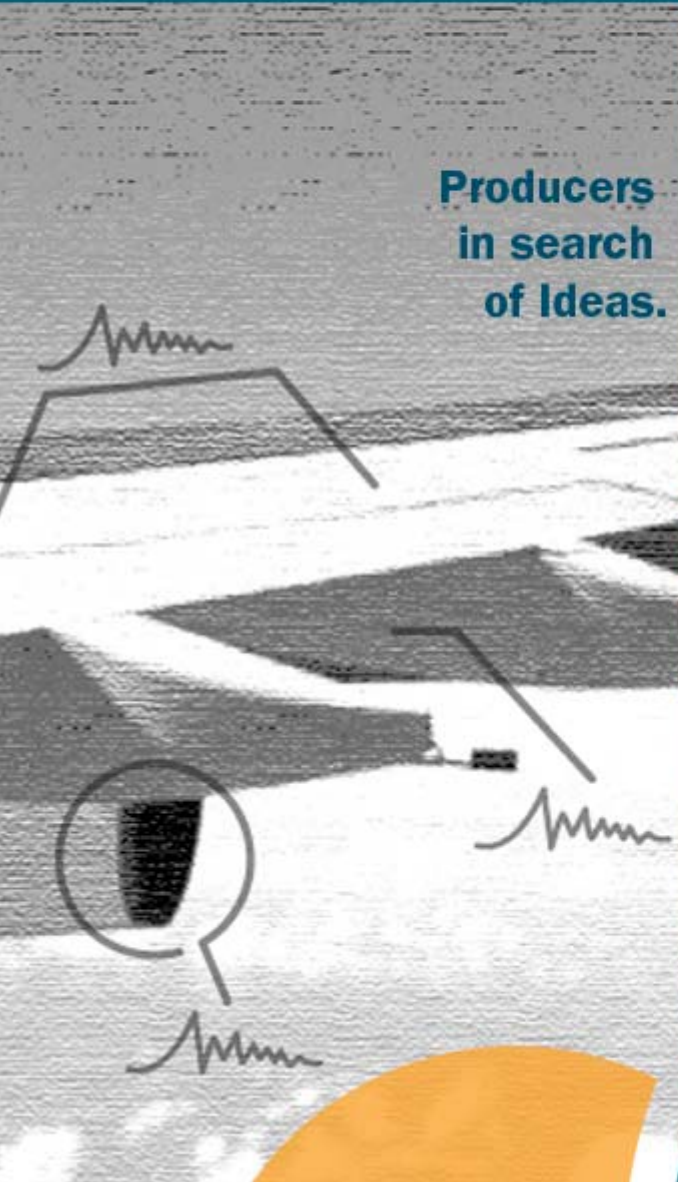
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**The Bridge between
Research Institutions and Economy**

**Producers
in search
of Ideas.**

**Ideas
in search
of Producers.**





Technologie-Lizenz-Büro der Baden- Württembergischen Hochschulen GmbH

**Inventions, Technologies, Patents, Licenses
- Opportunities and Challenges –
Universities and Research Institutions
in Baden-Wuerttemberg**

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Patentability

Patents can be issued for inventions with the following characteristics (§1 PatG*):

- novel (§3 PatG*)
- innovative (§4 PatG*)
- capable of being commercially used (§5 PatG*)
- capable of being carried out
- reproducible

The description of the invention in a patent must be sufficient for an expert in the field to carry it out without putting in any further inventiveness.

* Refers to the relevant clauses in the German Patent Act (Patentgesetz)

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Novelty

The invention is **novel**, if it is not as yet part of the state of the art in the relevant field. In this assessment, only the most obvious state of the art needs to be considered.

- **State of the art:** All technological know-how that prior to the application date (priority date) was made publicly available anywhere in the world and by whatever means
- **Publicly available:** If it was possible for an open group of people with appropriate knowledge to obtain sufficient information about the content of the invention or its essentials
- **Information:** Written, all kinds of media, oral, informal discussions, conferences and exhibitions, prior use, samples, demonstrations

Indications for innovative activities

- Solution to long-standing need
- Unsuccessful attempts by the experts in the field
- Overcoming prejudices and misconceptions
- Overcoming special difficulties
- Turning off the beaten path
- Distance from known solutions
- Lucky move / solution
- Positive assessment by the experts in the field
- Having impact on further technological developments
- Commercial success (but not purely financial)

Conclusion: „Simple and nifty“

Indications against innovative activities

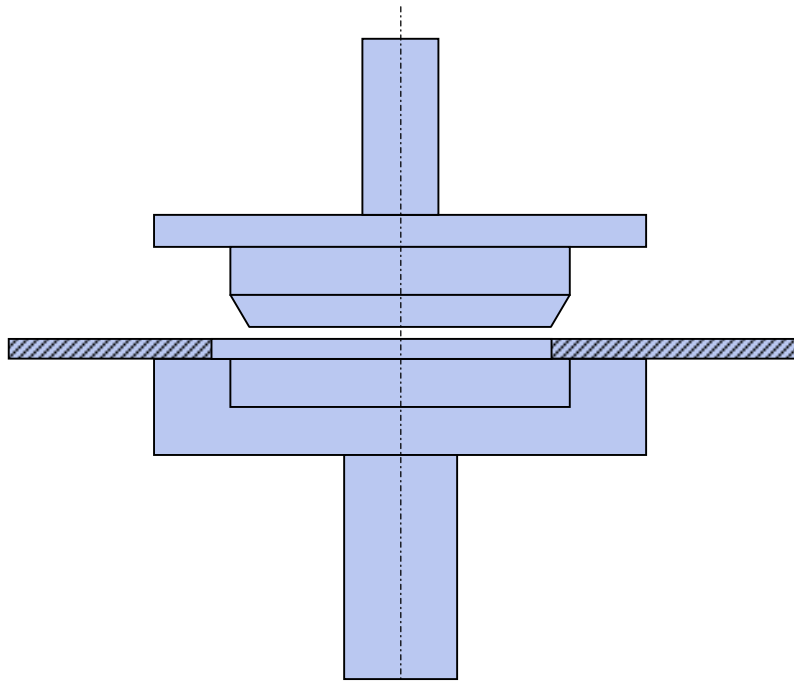
- Solution which is in line with current mainstream activities
- Transfer of known solution to a neighbouring field
- Combining known elements without synergistic effect
- Simple changes in scale (e.g. size, strength)
- Change of the materials used with no impact on functionality
- Simple automation
- Purely technical and design based measures
- Multiple inventions

What is protected by a German patent?

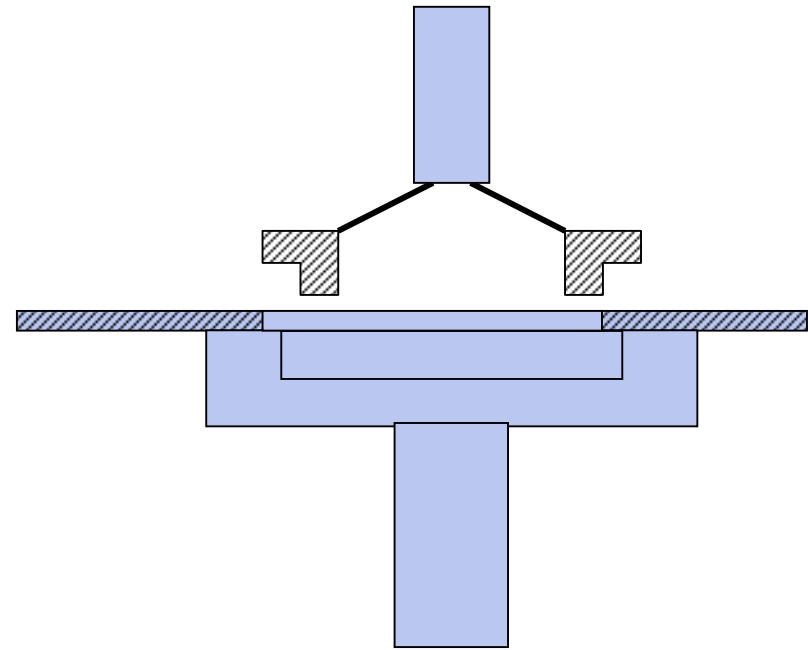
- The scope of a patent is determined by the **content** of the claims (§14 PatG; refers to article 14 of the German patent act)
- Content does not mean „**the exact wording**“ but rather „**the technical meaning**“
- This ensures that it is **not** possible to undermine the granted patent protection by implementing minimal variations on the patented product or process
- The **scope** of the patent (including description, application examples and possibly drawings) is also taken into account to determine the disclosure of the patent.

Circumventing a patent by functional analysis: *CD drive*

Patented characteristics → Abstracted function → New characteristics



**Conical part enters into disc axially
this centres the disc
fixation is effected by the cylinder**



**Spreader moves towards disc
counterforce plays spreader
further playing centers and fixes disc**

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Assessment of an innovation

Aspects regarding the character of the patent

- Does the invention allow for the creation of a new, independent product? → *Product patent*
- Does the invention allow the improvement of an existing product? → *Product patent*
- Does the invention protect a process or a method? → *Process patent*
- How wide-ranging is the invention protected? → *Opportunity to circumvent patent*
- Does the invention depend on other / independently owned rights? → *Dependence*
- Are there rights by others to the invention?
(e.g. Prior use, cooperation agreements) → *Rights by third parties*
- Is the use or misuse of the patent easily detectable?
(e.g. on the finished product) → *Verifiability*

Assessment of an innovation

Aspects regarding the technical feasibility

- What degree of maturity does the invention exhibit?
(idea, proof of concept, sample, laboratory prototype, prototype)
- How elaborate is the solution relatively to known alternatives?
- Is the invention compatible with the requirements and conditions of the potential field of use?
- Are there weak points in terms of construction or function?
- Is the technical solution optimally matching the problem to be solved?

Assessment of an innovation

Aspects relevant to its commercialisation

- Are there high costs for the development and how long will it take to reach the market ?
- What are the main markets and the special segments ?
(distribution networks, availability, export countries)
- Is there good correlation between countries with patent protection and the market structure? (foreign patent protection)
- What market volume can be reached quickly?
(analysis of the market leaders)
- What quantities and turn-over can be achieved?
(checking against market data)
- How large is the economic contribution of the invention for the final product? (reduced cost, increased utility)

Price tagging of inventions and patents

- The novelty must measure up to the best on the market (so as to be recognized as „even better“)
- Achieving acceptable usage and license conditions is a question of negotiation (not a question of law)
- Developing a likely future scenario is of prime importance (eliminating costs for the potential user)
- Costs incurred to date in developing the invention are irrelevant for the potential user
- How long will it take to develop a new strategy, assuming the invention is not available (estimating the increased costs that would incur)
- What other demands for similar technologies can serve as a benchmark for achievable conditions

The conditions of use for technical inventions can vary widely

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Relevance of patents for research institutions

- Encourages R&D activities using the protected IP as well as the established processes of the organisation
- Allows protection of the basic know-how and the proprietary results obtained through previous R&D activities
- Generates revenues and licensing income in cases of industrial applications
- Allows the protection of own ideas, supports the acquisition of new R&D contracts with industry
- Motivates R&D-staff and employees by means of financial incentives to the inventors
- Documents the scientific and market oriented approach (for the benefit of the society, public funds and industry)

Patent exploitation

There are basically three channels:

- **Licensing** „Classical “ approach: the implementation depends on the quality of the technology (e.g. significance, applicability)
- **Start-up company** Spin-off: only advisable when combined with transfer of personnel (e.g. scientists as entrepreneurs)
- **Cooperation** Project acquisition: a research organisation operates as an enterprise (e.g. business unit)

Warning: *These three channels are usually not compatible with each other !*

Patent exploitation by licensing

Balanced / fair conditions for all parties

- Licence agreement or sales agreement (scope, length of agreement, refund, termination)
- Determining license or use conditions is a matter of negotiation (not a question of law)
- Price tagging of licences (value of a license, valuation of a scientific idea)
- Revenues are mainly determined by the potential economic value of the invention for the enterprise
- In the case of research organisations, licenses should not prohibit entering into future R&D contracts
- Offer of first right of refusal for future improvements to broaden the license
- Exclusion of liability to be negotiated

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Patent exploitation via a spin-off company

- Use of basic and specialised know-how as an entrepreneurial decision
- Transfer / licensing of patent rights to the start-up company (lump sum, milestone payments, turnover-based return, staggered conditions, future IP-rights on subsequent improvements)
- Transformation of the value of the patent into a share of the enterprise
- Focus of management of the spin-off company on the commercialisation of the patent (embedded into a marketable product)

Conclusion: *High likelihood of successful patent exploitation
(Remaining risk: Life cycle of technology is uncertain)*

Patent exploitation via cooperation

Product development

- Product concept to be established (defining the characteristics)
- Market potential to be tested (cost-effective manufacture, no problematic material)
- Customer benefit to be evaluated (minimal effort needed to reach marketability)
- Product requirements to be checked (approvals required, conformity with standards)
- Market segmentation / market price (competition)
- Licencee to be found / establishing options for cooperation

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Patent exploitation via collaboration

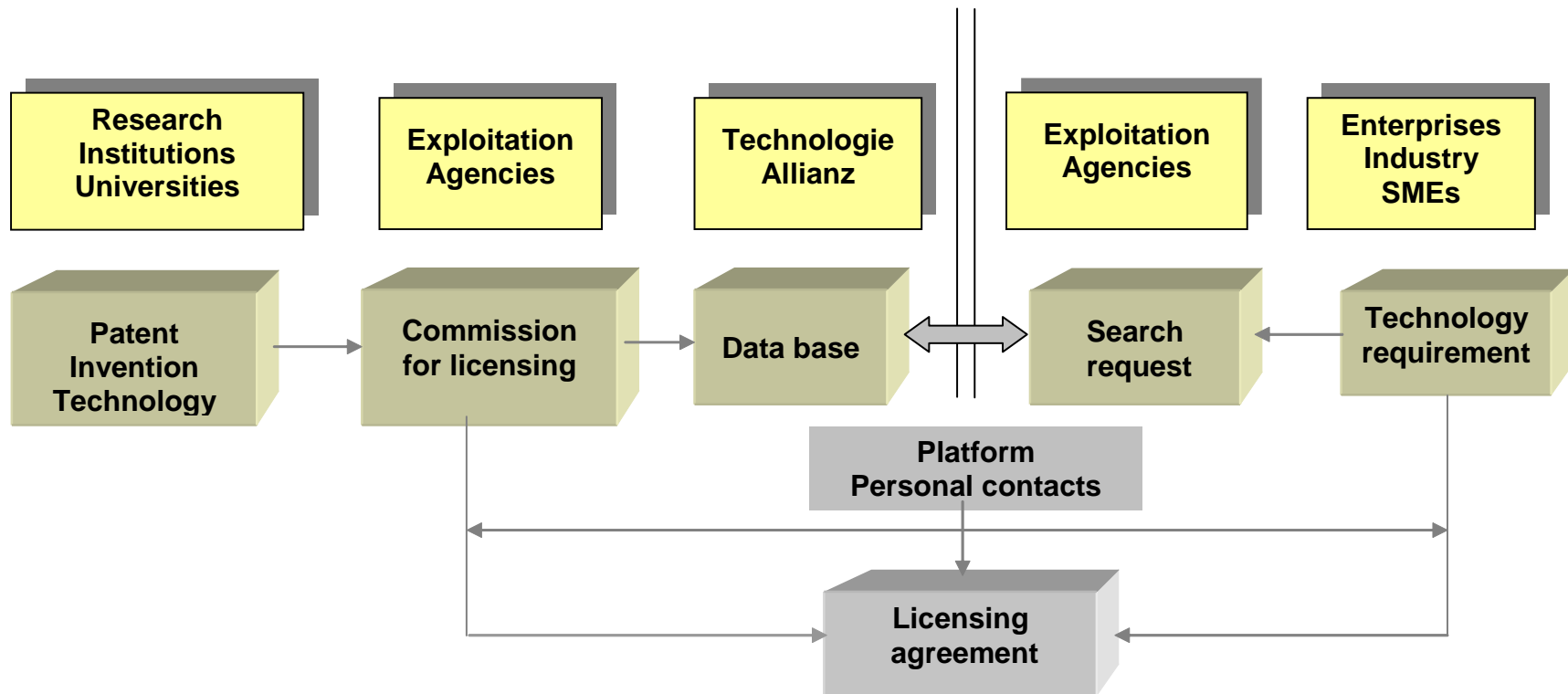
Technology transfer from research institutions

- Transfer of research results from science to industry
- Contract research by the research organisation (demand driven solutions)
- Additional cooperation between the enterprise and the research organisation
- Transfer of personnel from research to industry
- Joint-Venture (further development and patenting of technology)
- Information transfer, consultancy, patent research, market analyses, benchmarking
- Long-term strategy of the research institution must not hinder the acquisition of new R&D contracts

Exploitation Process

Technology offers

Technology needs



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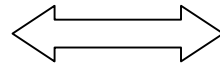
Options for patent exploitation

Direct patent exploitation

- Focused on client
- Licensing of individual patents (e.g. product or process)
- Standardised valuation of all patents according to specified criteria

Additional benefits

- Be well known as a service provider (e.g. research, R&D, databases, knowledge management, expert opinion, cost optimisation)
- Further uses of information (e.g. fairs, technology platforms, databases)



Integrated patent exploitation

- Market or product oriented
- Licensing of patent families or groups of patents (also with R&D services)
- Differentiated evaluation of patents by selecting according to certain characteristics („profiling“)

Additional benefits

- Establishing the organisation as a suitable channel for commercialising know-how and future patentable results e.g. research organisation)
- Using specific knowledge in industrial segments and networks

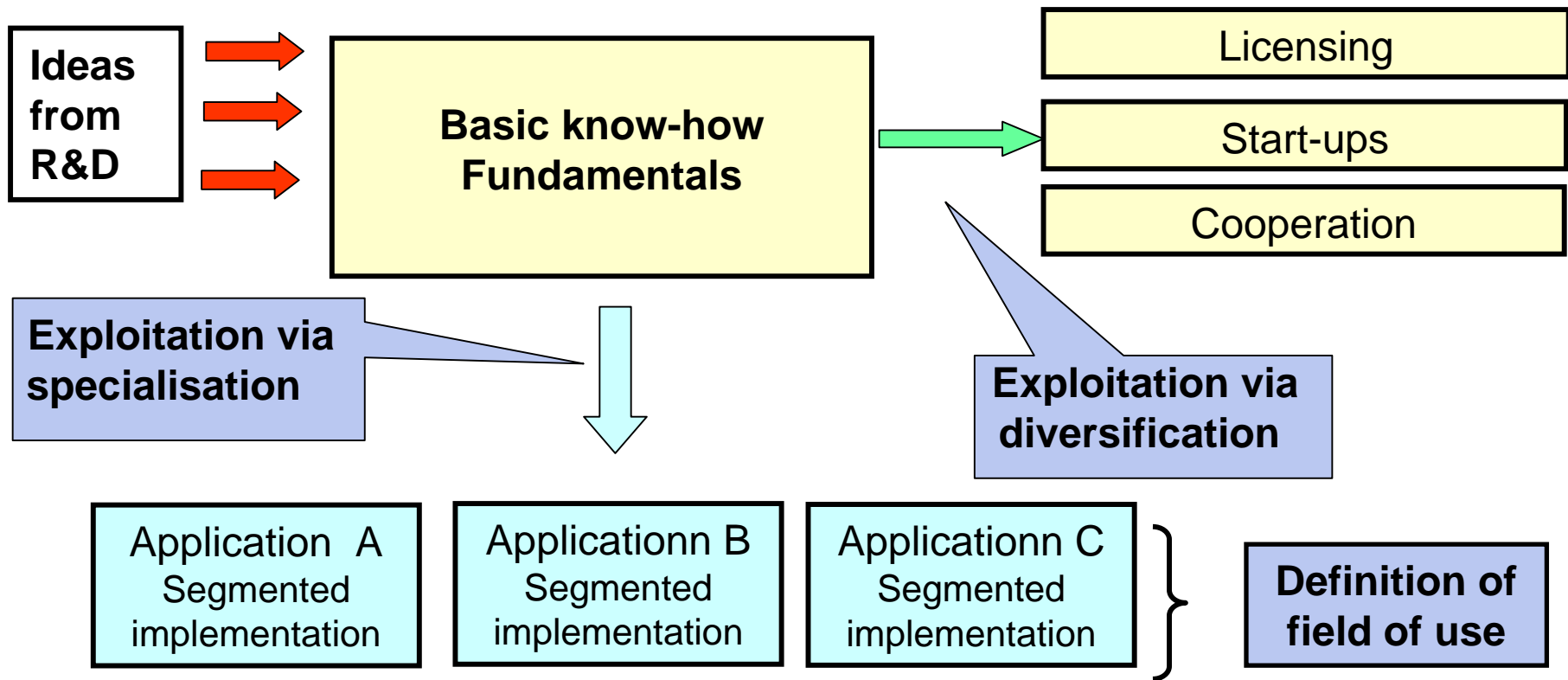
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Basic know-how

Competitive advantage in the exploitation process

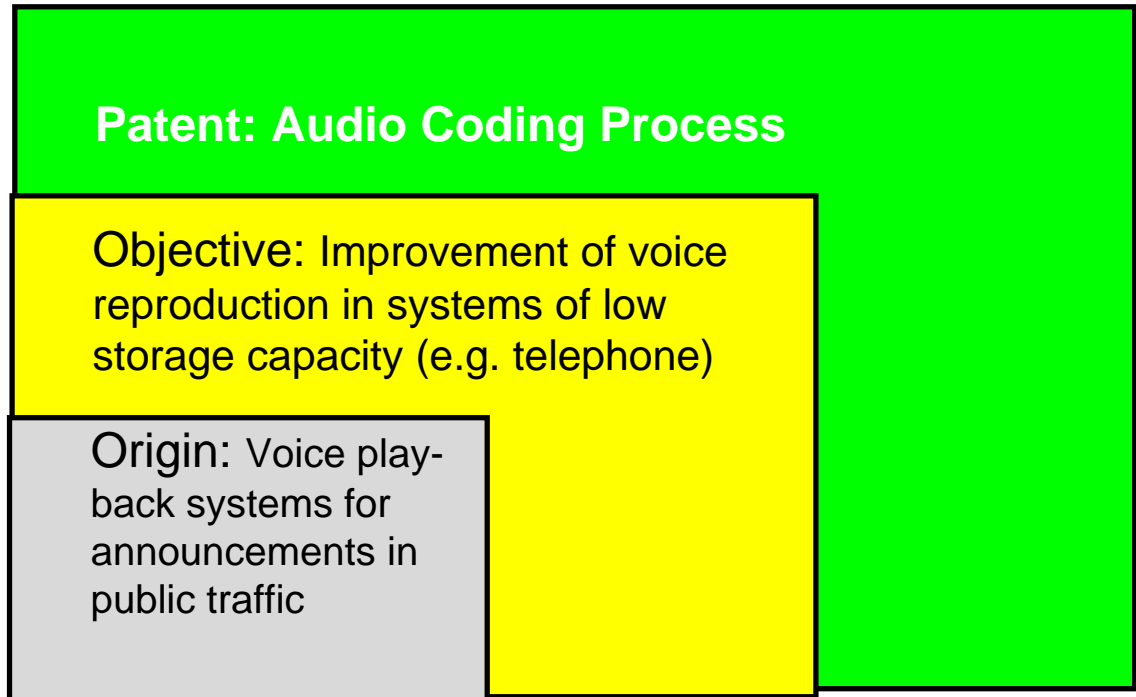


Contractual exploitation and commercialisation: Specialisation

Application = „field of use“

Example: MP 3 (Fraunhofer-Gesellschaft)

Licensing according to the standard business conditions of the research organisation (e.g. for specific fields of use)



Constraints on exploiting inventions and patents

- Does the patented solution indirectly create economic disadvantages for the licensee?
- Are there communication barriers between inventors and industry ?
- Are there reservations of the licensee about accepting the invention ? (NIH syndrom of R&D departments)
- Is the use of „pirate inventions“ possible without patent infringement?
- In the case of a „circumventing invention“ is it possible to conceal any patent infringement ?
- Is it possible to detect patent infringement by third parties by inspecting the corresponding products?

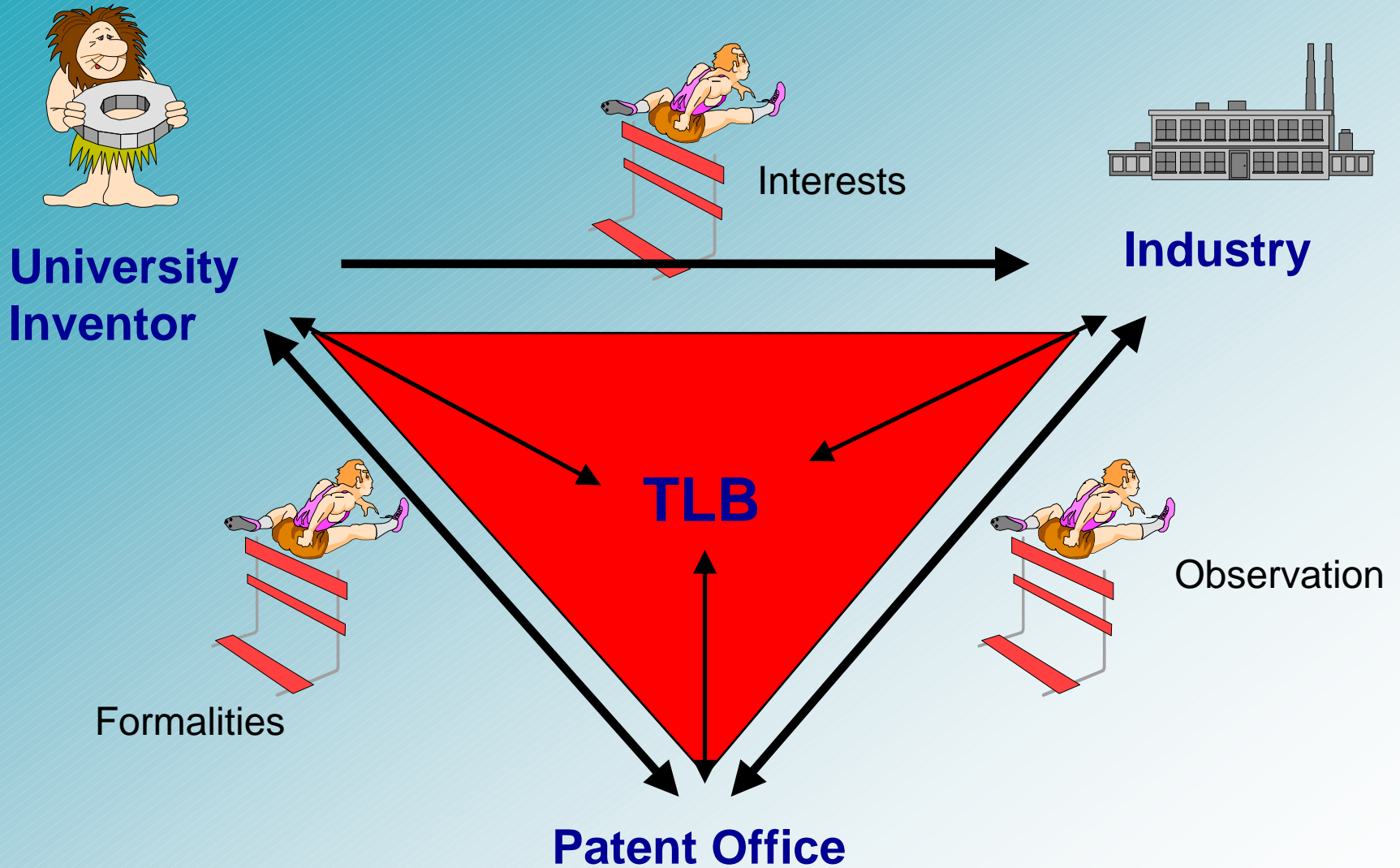
Business Areas of TLB GmbH

- Consultancy to universities and other institutes of technology in the State of Baden-Wuerttemberg on inventions, intellectual property matters and their commercialisation
- Evaluation of inventions
 - Potentials for property protection
 - Potentials for commercialisation
 - Contractual issues
- Management of intellectual property and patent portfolios on behalf of the institutions and the inventors
- Commercialisation of patented inventions

Criteria for the Assessment of Inventions

- Quality of the Invention, Stage of Development
- Possibility of Obtaining IP Protection; Patent Portfolio
- Probability of Successful Implementation and Commercialisation
- Market Assessment; Licensing Opportunities

Position and Function of TLB GmbH



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Thank you for your attention!

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