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GERMAN AND EUROPEAN
PATENT ATTORNEYS
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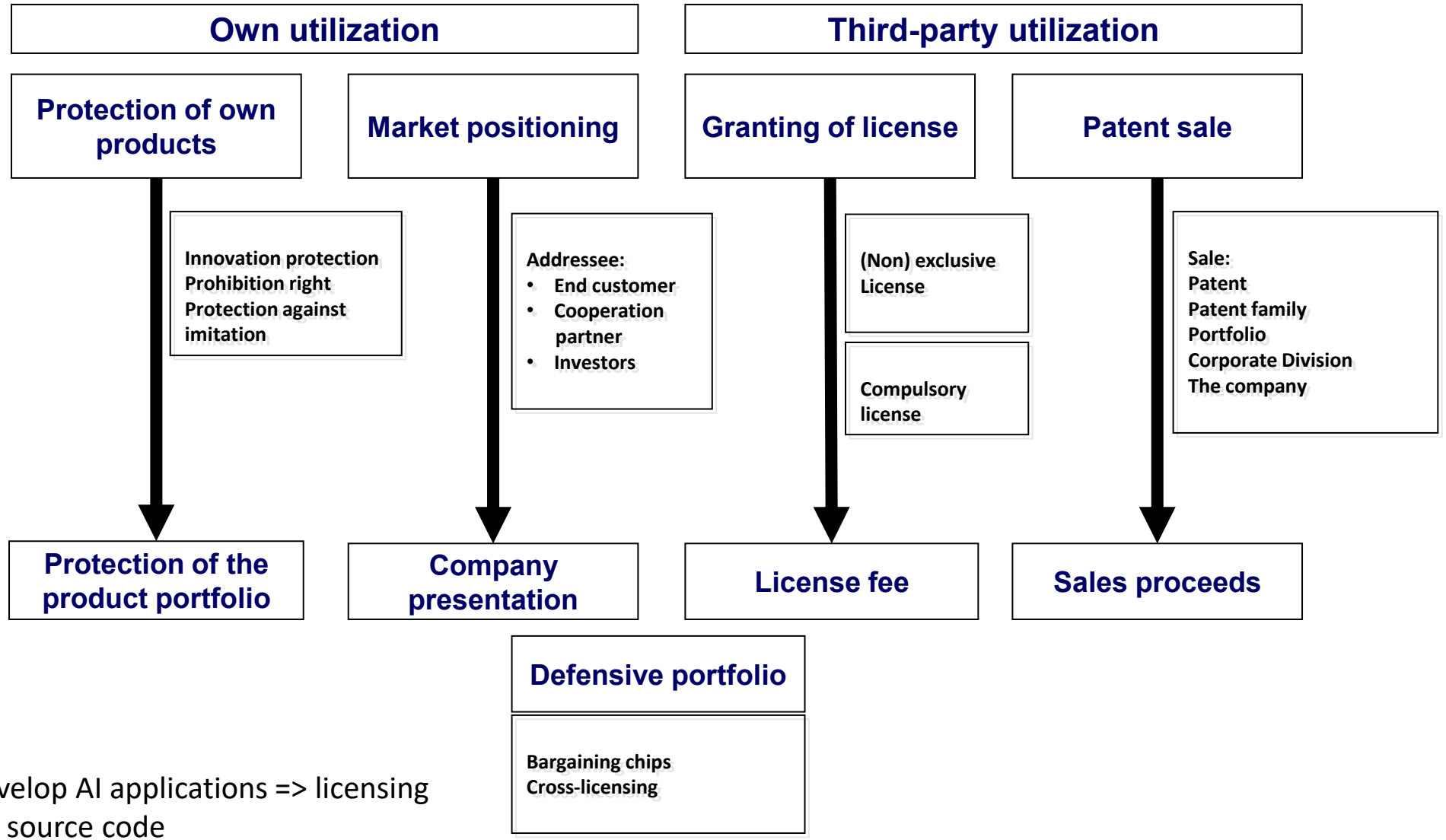
CONTACT US

Overview

Motivation	Prerequisites	Procedure	Registration strategies	Q&A
Protection of innovation	General patent law	Inventor/ Patent attorney	Substantive aspects	Questions and Answers
Registration figures Computer implemented Inventions	Software patents	Official side	Geographical aspects	Discussion round

Utilization of innovation:

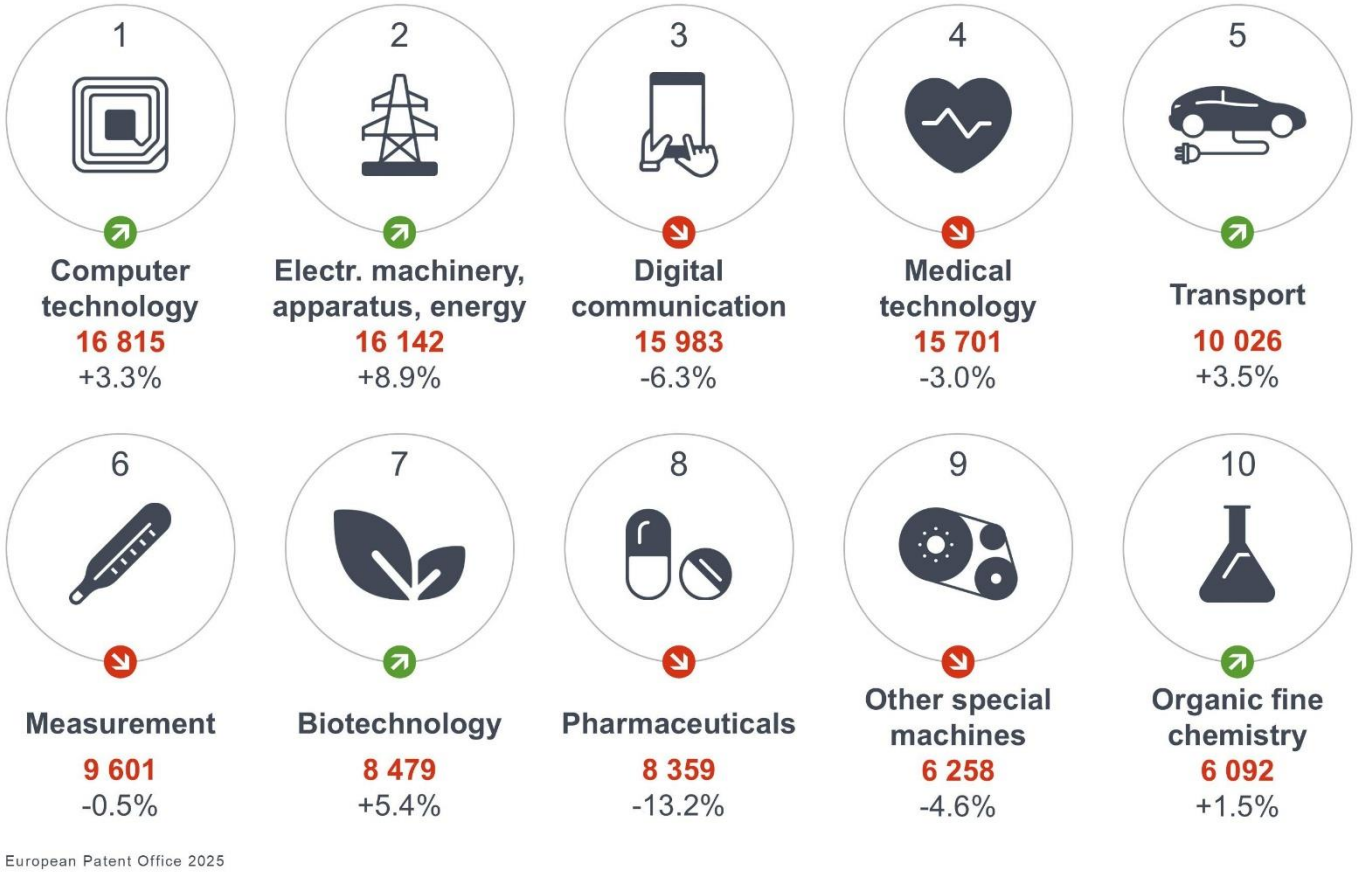


QUICK LEARNING:

No need to fully develop AI applications => licensing

No need to provide source code

Technical fields with most patent applications 2024 TOP 10



European Patent Office 2025

QUICK LEARNING: Federal Court of Justice: Software is patentable!

Development of global patent families in GenAI applications 2014–2023:

Application	Total published patents, 2014–2023	Published patents, 2014–2023
Software / other applications	29,892	371 → 7914
Life sciences	5,346	50 → 1516
Document management and publishing	4,976	50 → 1211
Business solutions	4,801	109 → 944
Industry and manufacturing	2,522	38 → 563
Transportation	2,267	8 → 523
Security	2,226	25 → 632
Telecommunications	2,194	91 → 330
Personal devices	1,436	30 → 279
Banking/finance	1,345	12 → 352

Source: WIPO, based on patent data from EconSight/IFI Claims, April 2024.

Leading countries for patent applications 2024

TOP 35

		2024	+/- 2023
1	United States	47 787	-0.8%
2	Germany	25 033	+0.4%
3	Japan	21 062	-2.4%
4	P.R. China	20 081	+0.5%
5	R. Korea	13 107	+4.2%
6	France	10 980	+1.1%
7	Switzerland	9 966	+3.2%
8	Netherlands	7 054	0.0%
9	United Kingdom	6 076	+3.1%
10	Sweden	4 936	-3.7%
11	Italy	4 853	-4.5%
12	Belgium	2 615	+1.1%
13	Denmark	2 539	-2.2%
14	Finland	2 400	+2.7%
15	Spain	2 192	+3.0%
16	Austria	2 146	-8.0%
17	Canada	2 119	+3.3%
18	Israel	1 715	-0.6%
19	Chinese Taipei	1 499	-3.8%
20	Hong Kong SAR (China)	1 197	+12.2%
21	Ireland	1 118	+4.4%
22	Singapore	1 092	+2.3%
23	Australia	919	-9.7%
24	India	837	-5.5%
25	Norway	817	+16.7%
26	Poland	692	+3.4%
27	Türkiye	542	-12.3%
28	Liechtenstein	361	-19.2%
29	Portugal	347	+4.8%
30	Luxembourg	307	-10.2%
31	Czech Republic	252	+5.4%
32	New Zealand	226	-16.0%
33	Brazil	186	-17.3%
34	Slovenia	156	+2.0%
35	Saudi Arabia	143	-21.0%

European Patent Office 2025

QUICK LEARNING: US files most European applications

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Example: International Law, different patent practice?

German Patent Act, Patentgesetz, PatG

§ 1

(1) Patents shall be granted for any **inventions**, in all fields of technology, provided that they are new, involve an inventive step and are susceptible of industrial application.

(2) (…)

(3) The following in particular shall **not** be regarded as inventions within the meaning of subsection (1):
1. discoveries, scientific theories and mathematical methods;
2. aesthetic creations;
3. schemes, rules and methods for performing mental acts, playing games or doing business, and **programs for computers**;
4. **presentations of information**.

(4) Subsection (3) shall exclude patentability only to the extent to which protection is being sought for the subject-matter or activities referred to **as such**.

European Patent Convention EPC

Article 52
Patentable inventions

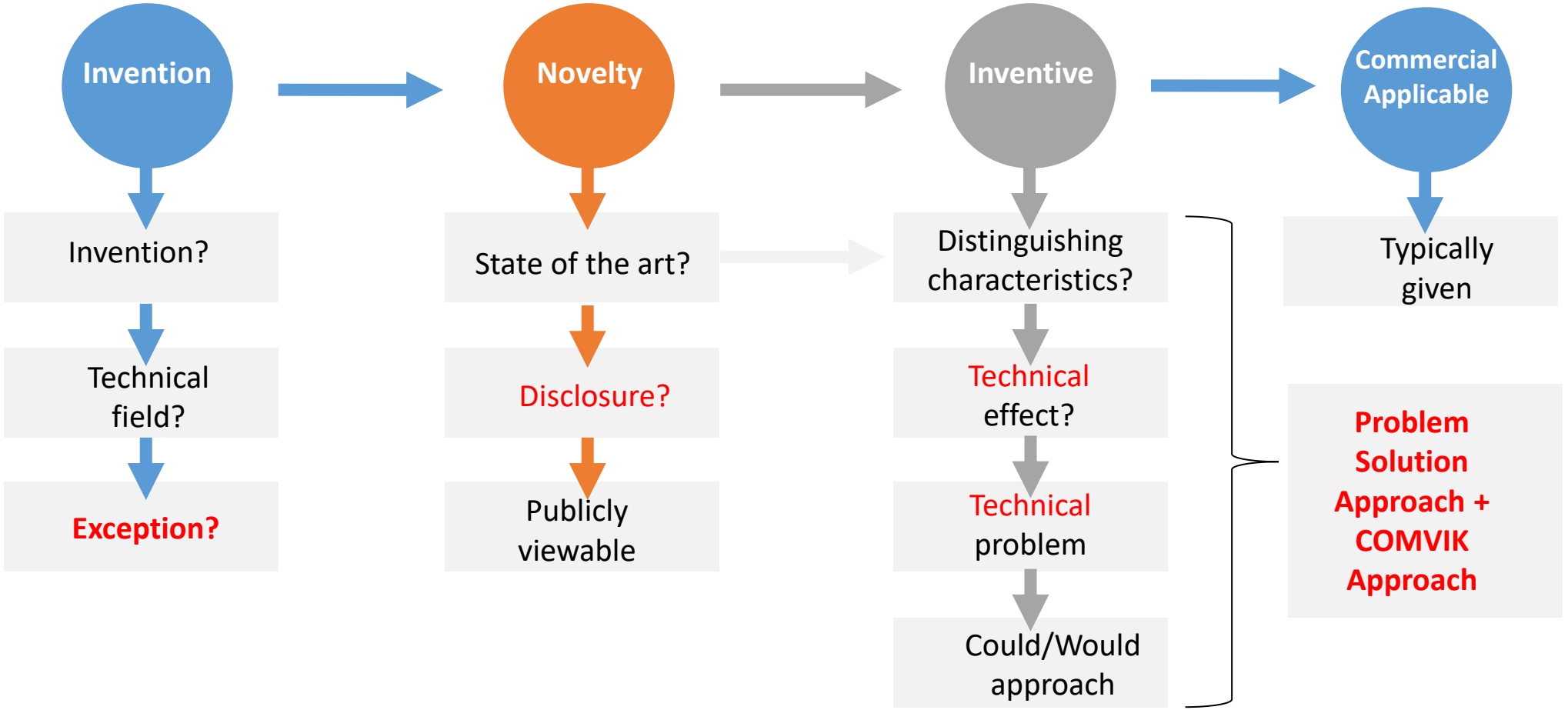
(1) European patents shall be granted for any **inventions**, in all fields of technology, provided that they are new, involve an inventive step and are susceptible of industrial application.

(2) The following in particular shall **not** be regarded as inventions within the meaning of paragraph 1:
(a) discoveries, scientific theories and mathematical methods;
(b) aesthetic creations;
(c) schemes, rules and methods for performing mental acts, playing games or doing business, and **programs for computers**;
(d) **presentations of information.**

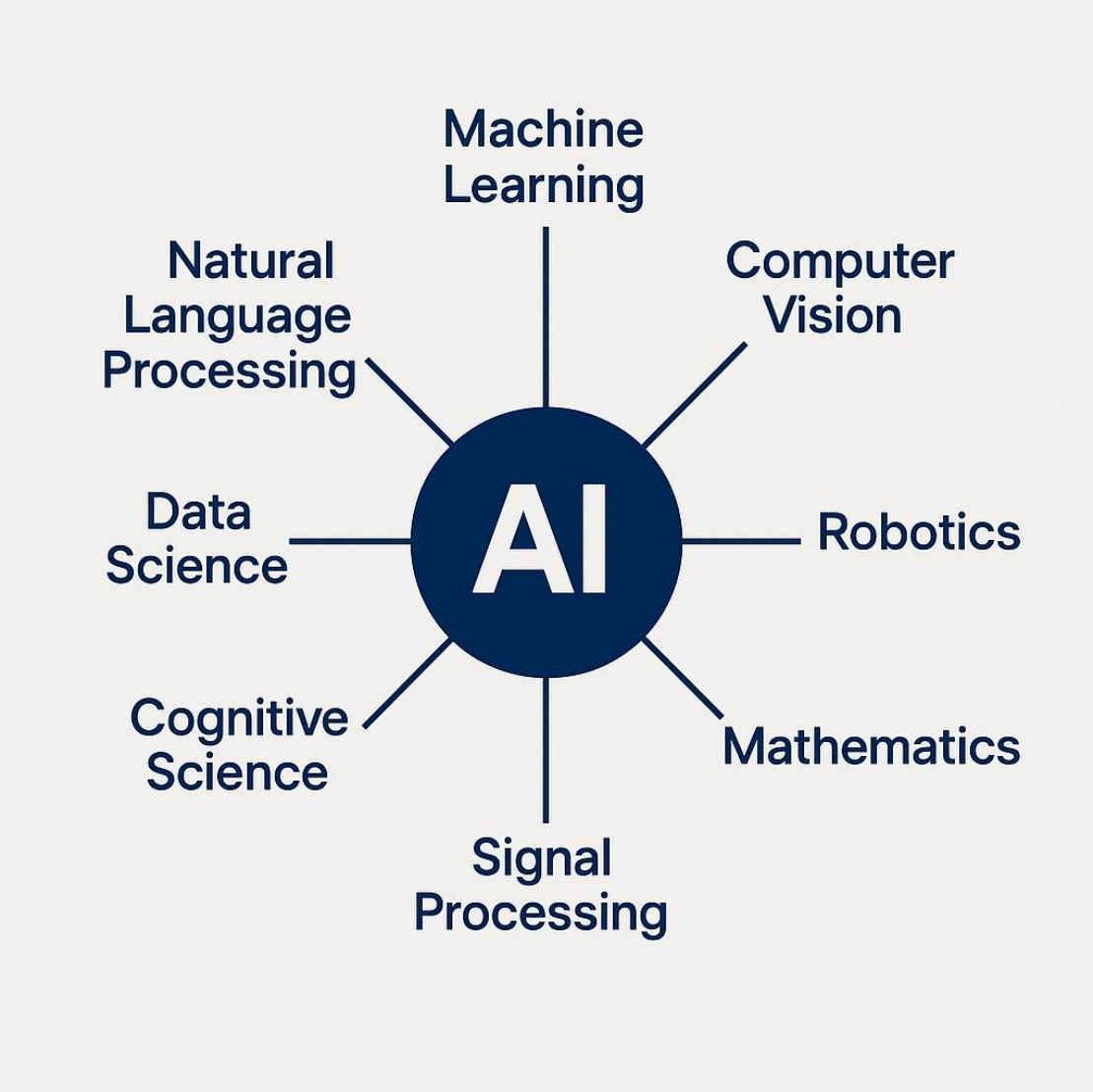
(3) Paragraph 2 shall exclude the patentability of the subject-matter or activities referred to therein only to the extent to which a European patent application or European patent relates to such subject-matter or activities **as such**.

Requirements for the patentability of software

Patents are granted for **inventions** in **all fields of technology**, provided they are **new**, involve an **inventive step** and are industrially applicable.



Technical fields of AI:

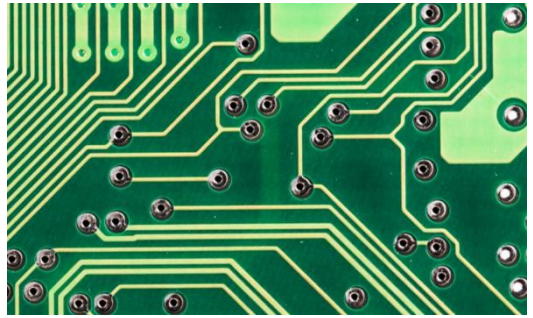


QUICK LEARNING: AI patents are closely related to conventional software patents

Overview, Mixed type inventions:

Technicality

Hardware



§

Software

```
83 public class LinkedList<E>
84     extends AbstractSequentialList<E>
85     implements List<E>, Deque<E>, Cloneable, java.io.Serializable
86 {
87     transient int size = 0;
88
89     /**
90      * Pointer to first node.
91      * Invariant: (first == null && last == null) ||
92      *            (first.prev == null && first.item != null)
93      */
94     transient Node<E> first;
95
96     /**
```

Patents

General Question:
Patenting Hardware and/ or Software?
=> Strategies?

COMVIK Approach: Mixed type invention

Applying the Problem-solution approach

1. Determination of the closest prior art
2. Identifying Distinguishing Features
3. Formulation of technical effect
4. Formulation of the objective technical problem
5. Could-would approach

Embedded System: Software and/ or Hardware
=> Mixed type? Software as such?

The COMVIK decision (simplyfied)

A method in a digital cellular phone system of the GSM type,

in which subscriber units (MS) are controlled by a subscriber identification module (SIM), **characterized in that**

the subscriber identification module (SIM) has at least two optionally usable identifiers (IMSI 1, IMSI 2), the data of which are stored in a location directory of the system, whereby

only one identifier (IMSI 1 or IMSI 2) can be activated at a time and the user can choose the desired one when using a subscriber unit (MS),

the optional activation being used to split the charges between business and private calls or between different users.

Only technical distinguishing features are considered contributing to inventiveness
=> Technical solution for a technical problem

Motivation	Prerequisites	Procedure	Registration strategies	Q&A
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Procedure:

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Inhouse drafting

01

Idea/ Innovation

First contact
Invention disclosure
One page description:
- Problem
- Solution
- Sketches
  - black/ white
  - schematic

02

Discussion

What specific technical problem are you solving
What do you do **specifically** (technical apprenticeship)?

ATTENTION:
we improve the... (=effect)
We carry out the following steps... (technical teaching)

03

Elaboration

Draft application in approx. 2 weeks
Change requests (marked changes) or release

04

Registration

We need:
- Release
- Inventor
- Registration office
- Not: Signature

External drafting

We can use english applications before EPO. Germany: translation required (12 months after filing)
Regional phase requirements: application number. **Attention: no undisclosed subject-matter**!

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Technical features:

Further effects of programs for computers
A computer program product might possess the potential to produce a "further" technical effect

Direct link to physical reality?
the Enlarged Board in G 1/19 (OJ 2021, A77) did not see a need to require a direct link with (external) physical reality in every case => to be discussed

Potential technical effect
either the technical effect that would result from the intended use of the data could be considered "implied" by the claim, or the intended use of the data

Virtual or "calculated" technical effect
There may exist exceptional cases in which such information has an implied technical use that can be the basis for an implied technical effect. Still, in general, data about a calculated technical effect is just data.

Tangible effect
The Enlarged Board in G 1/19 fully supported the view expressed in T 533/09 that a tangible effect is not a requirement under the EPC.

Implementation of a function on a computer system
irrelevant that the piece of information was used or processed by a conventional computer, or any other conventional information processing apparatus

Methods performed by a computer
Since a claim directed to a method of operating a computer involved a computer it could not be excluded from patentability by Art. 52(2) EPC (G 3/08, OJ 2011, 10).

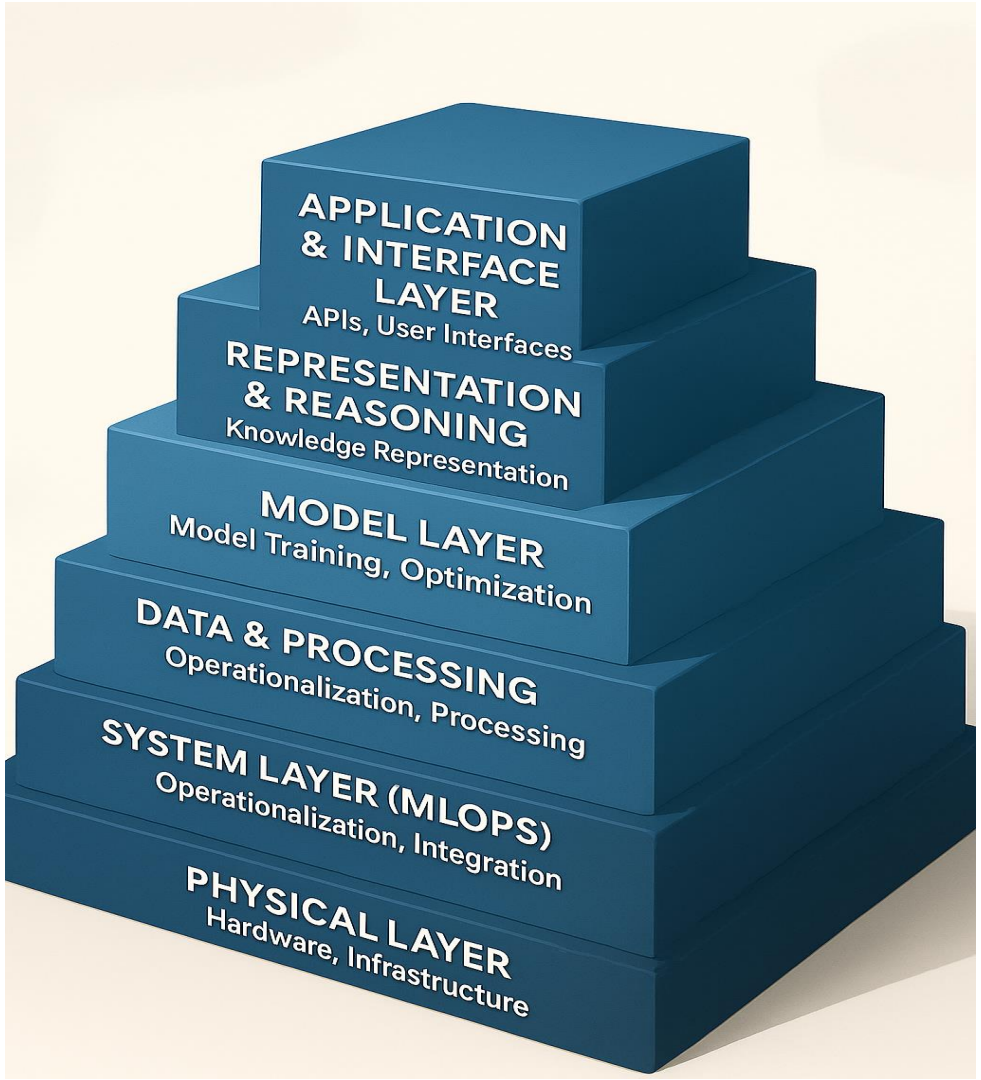
Computer-implemented simulation methods
In the Enlarged Board's opinion, the COMVIK approach was suitable for the assessment of computer-implemented simulations.

Source (adapted):
https://www.epo.org/en/legal/case-law/2022/clr_i_a_2_4_6.html

Patentability of single layers:

1. Application Layer – User-facing interfaces, APIs, chatbot/front-end integration.
2. Representation & Reasoning Layer – Knowledge modeling, embeddings, inference logic.
3. Model Layer – Training, fine-tuning, optimization of ML/DL models.
4. Data & Processing Layer – Data cleaning, transformation, feature engineering.
5. System Layer (MLOps) – Deployment, automation, CI/CD, integration.
6. Physical Layer – GPUs, cloud infrastructure, hardware resources.

Not to be confused with ISO OSI Stack



Application layer:

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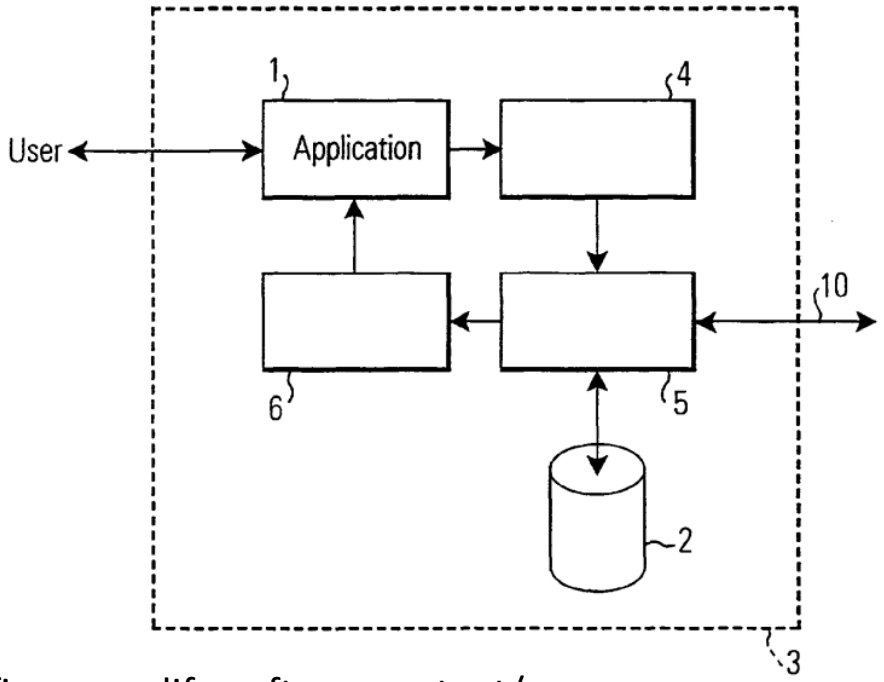
Claims EP1126674B1

1. A method of presenting data that are stored in a data storage device (2) of a data server (3) to a user, said user accessing said data server over a network, where in the process between accessing the server and presenting the data, at least one data path is used over which control data associated with the selection of data is sent, said at least one data path being unidirectional.

FIG.1



JUVE Patent › Cases › German Federal Court of Justice confirms Zoe Life software patent

Cloud computing

German Federal Court of Justice confirms Zoe Life software patent

The German Federal Court of Justice has confirmed a central software patent of investor Zoe Life Technologies, which covers cloud computing. The investor now wants to enforce the patent against Microsoft, among others. The latest development could see the beginning of a new series of lawsuits.

26 November 2021 by Christina Schulze

Computer & Software | German patent market | Germany | Print

https://www.juve-patent.com/cases/german-federal-court-of-justice-confirms-zoe-life-software-patent/

Neural Networks:

Claim:

1. A method for determining cardiac output from an arterial blood pressure curve measured at the periphery, in which the blood pressure curve measured at the periphery is **mathematically** transformed into the equivalent aortic pressure and the cardiac output is calculated from the equivalent aortic pressure, characterized in that the transformation of the blood pressure curve measured at the periphery into the equivalent aortic pressure is carried out with **the aid of an artificial neural network whose weighting values are determined by learning**."

Decision:

1. The present invention, based on machine learning, particularly in **connection with an artificial neural network**, **is not sufficiently disclosed,** since the inventive training of the artificial neural network cannot be carried out due to a lack of disclosure.

2. Since in the present case the claimed method differs from the prior art **only by an artificial neural network**, the training of which is not disclosed in detail, the use of the artificial neural network does not lead to a specific technical effect that could constitute an inventive step.

https://www.epo.org/en/node/659989

QUICK LEARNING: Commonly known features are not rendered inventive merely by using AI

Noise simulation:

Claim (extract):

A computer-aided method for the **numerical simulation** of a circuit with a delta step size that is subject to 1/f noise influences,- wherein the circuit is described by a model (1) comprising input channels (2), noise input channels (4), and output channels (3),- wherein the behavior of the input channels (2) and the output channels (3) is described by a system of differential equations or algebro-differential equations,

(…)

Decision:

I. The **simulation of a circuit subject to 1/f noise represents a sufficiently specific technical purpose** of a computer-aided process that is functionally limited to this purpose.

II. The specific technical applications of computer-aided simulation processes are themselves to be regarded as modern technical processes that constitute an essential component of the manufacturing process and generally precede physical production as an intermediate step. In this sense, such **simulation processes cannot be denied a technical effect simply because they do not yet encompass the physical end product**.

https://www.epo.org/en/node/599803

Mathematical Algorithms/ Technical implementation:

Claim 1 reads as follows:

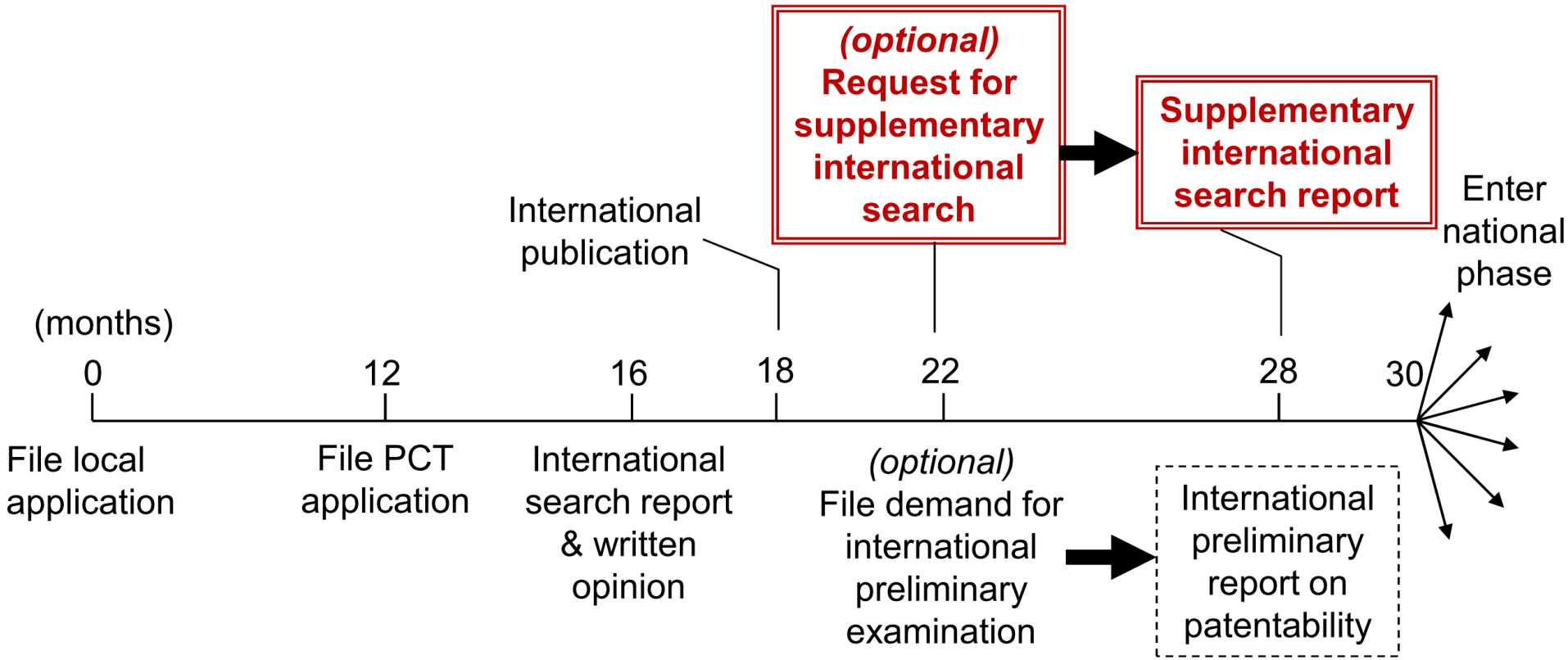
"A method for the computerized classification of an unclassified text document into one of a plurality of predefined classes based on a classification model obtained from the classification of a plurality of preclassified text documents which respectively have been classified as belonging to one of said plurality of classes, said document and said documents respectively comprising a plurality of terms which respectively comprise one or more symbols of a finite set of symbols;

Decision:

... Since the **mathematical algorithm does not contribute to the technical character of the claimed method, an inventive step can be present only in its technical implementation**. The only implementation features specified in the claim are references to the method being "computerized" and the text documents being "digitally represented in a computer". The skilled person, when given the task of implementing the algorithm, would certainly have chosen to represent text documents "digitally in a computer"....

https://www.epo.org/en/boards-of-appeal/decisions/t091358eu1

Time Frame:



Direct Filing DF + Priority EP Phase (31 months)

Source: WIPO Seminar Presentation on the Patent Cooperation Treaty (PCT)
The System for Worldwide Filing of Patent Applications
November 12, 2020

Geographical Aspects
Validation vs. uniform effect:

Uniform effect with currently 18 EU states

AND/OR supplementary

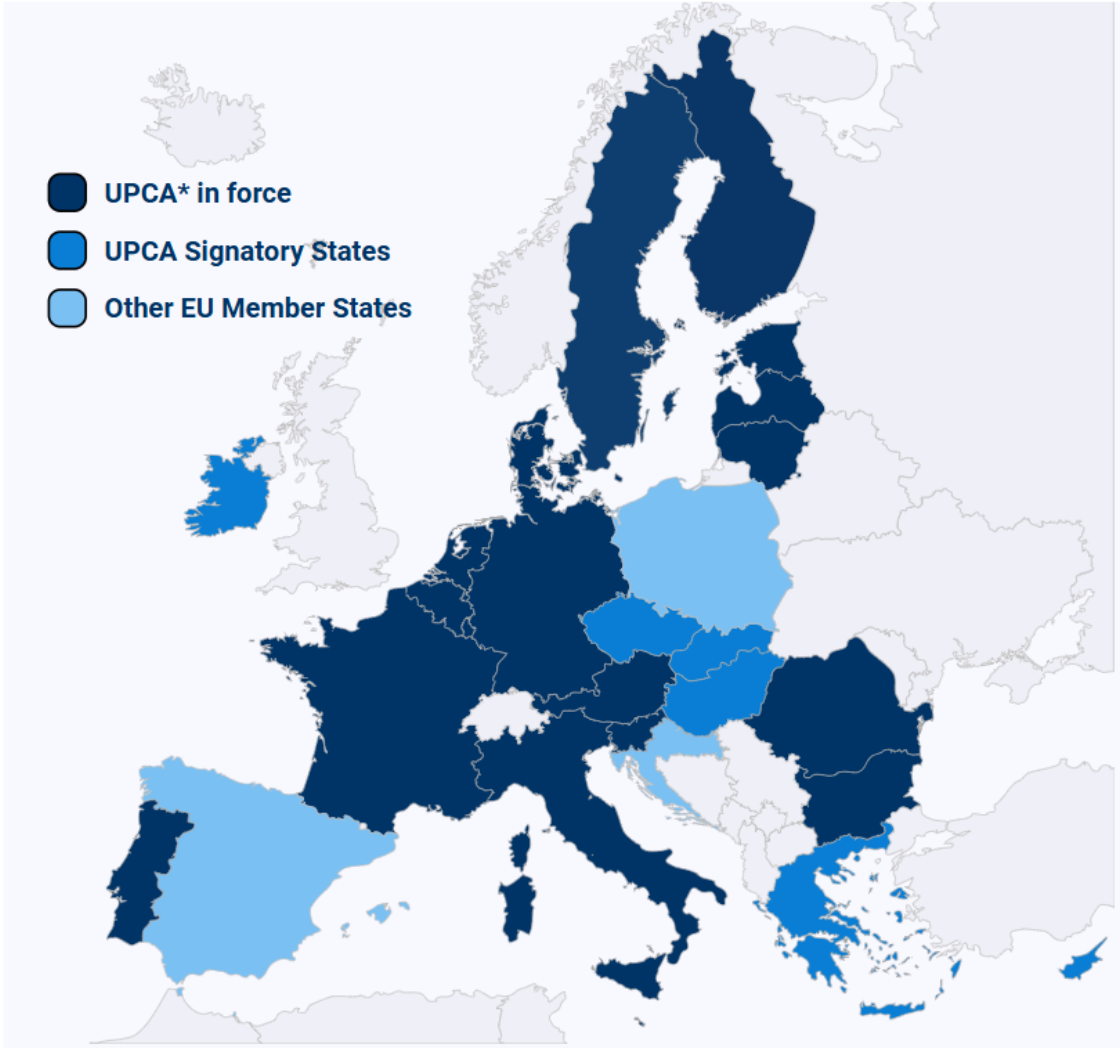
Validation in up to 39 member states of the European Patent Convention EPC

27 EU countries
Protection also in countries outside the EU (Switzerland, Turkey, ...)

Source:
https://www.epo.org/de/about-us/foundation/member-states
https://www.epo.org/en/applying/european/unitary/unitary-patent

Uniform effect:

UPC Member States map



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- Croatia
- Poland
- Spain

* UPCA stands for "Agreement on a Unified Patent Court"

Motivation	Nouns Aspects	Procedural Aspects	Financial Aspects	Q&A
EPO Numbers	General patent law	Inventor/ Patent attorney	Substantive aspects	Questions and Answers
Emerging Technologies	Specialty Software patents	Official side	Geographical aspects	Discussion round


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