European IP Helpdesk

Stay ahead of the innovation game.
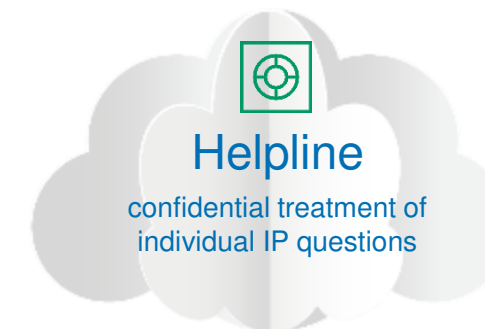
IP and Artifical Intelligence

Robert Harrison

European IP Helpdesk

- Service initiative of the European Commission

- Addressing **current and potential beneficiaries of EU-funded projects, researchers and EU SMEs**

- Free-of-charge first-line support on intellectual property (IP)

- Hands-on IP and innovation management support

- International pool of IP experts from various thematic fields

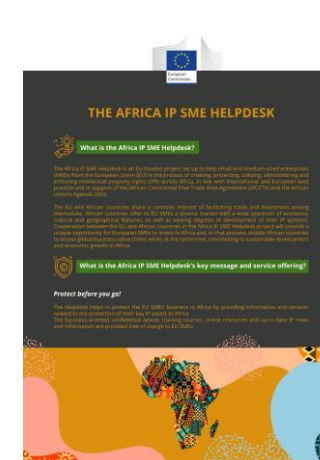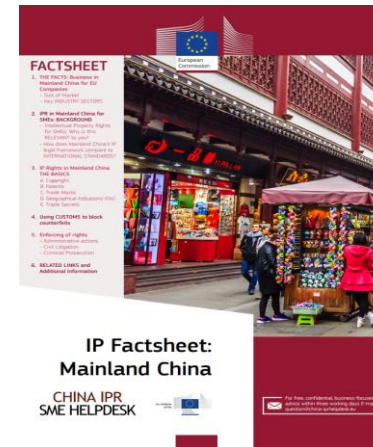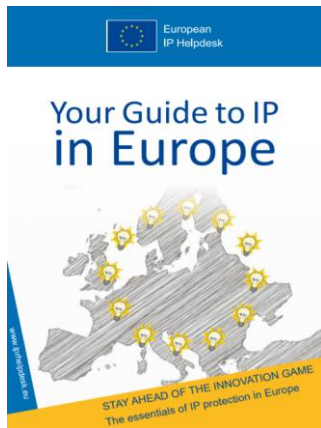- Unique cooperation scheme with the Enterprise Europe Network: 43 ambassadors from 26 EU countries

ec.europa.eu/ip-helpdesk

Training
free online and on-site sessions

Website
frequent updates from the world of IP and innovation

Helpline
confidential treatment of individual IP questions

Publications
practical IP knowledge through high-level publications

Ambassadors
local IP support throughout Europe

Events
info point at key networking events and conferences

The EC IP Helpdesks

www.ec.europa.eu/ip-helpdesk

# EC IP (SME) Helpdesk Hub – Gateway to Information

- E-learning modules & more
- Guides / Topic, country, sector-specific factsheets / Infographics
- Case studies

Out Now: Your Guide to Open Science in Horizon Europe

- Open science promotes transparency, accessibility, and collaboration in scientific research

- This Guide helps readers understand OS, offering explanations and guidelines for those preparing or already implementing a Horizon Europe project proposal.

European
IP Helpdesk

Your Guide to
Open Science in Horizon Europe

www.ec.europa.eu/ip-helpdesk
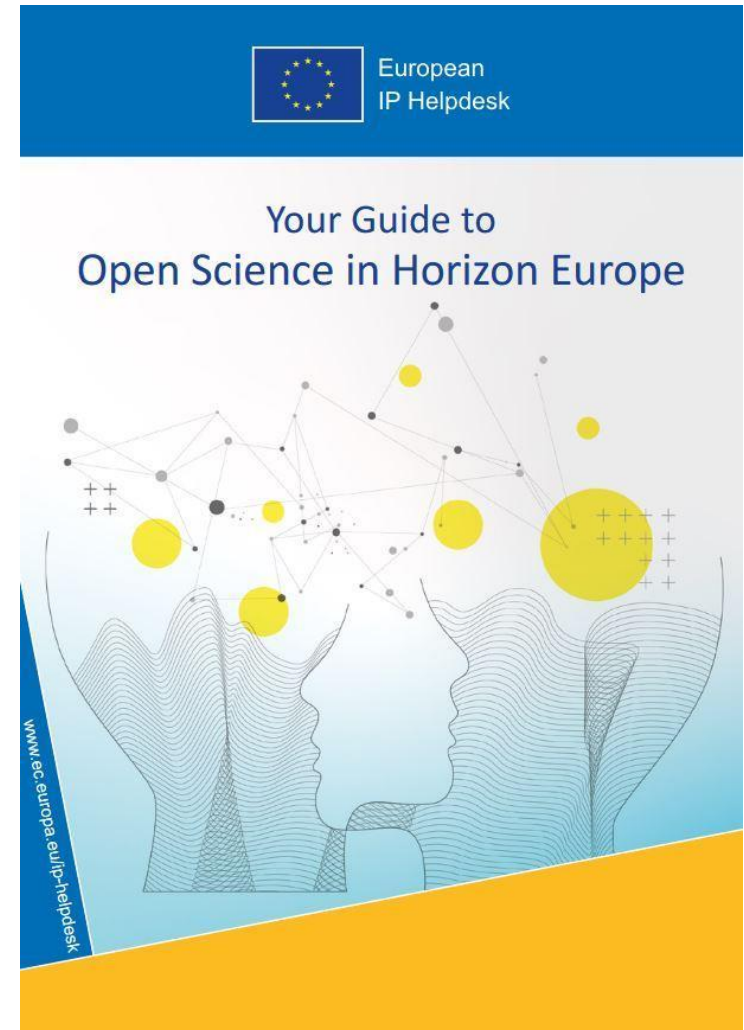
Public Consultation on Craft and Industrial Geographical Indications

- The consultation will shape future international policy and negotiations on geographical indications.

- Open until 10 October 2024, contributions can be submitted online or via email to GROW-CIGI@ec.europa.eu.

Ambassador Scheme

- **Cooperation scheme** with the Enterprise Europe Network (EEN): 43 ambassadors – 26 countries

- **Building IP capacities** among European SMEs

- **Overcoming language barriers**

- Making the topic **more accessible**

- Exchange and feedback from ambassadors on **needs of SMEs**

- Local **awareness** and **training events**

Upcoming events

Europa - Upcoming events

	Training and workshops
09 OCT 2024	EU - Webinar: IP and Artificial Intelligence
	((•)) Live streaming available

	Training and workshops
09 OCT 2024	Coop: EIC & EPO Webinar: Licensing-based business models
	((•)) Live streaming available

	Training and workshops
14 OCT 2024	EU - Webinar: IP Commercialisation & Licensing - Advanced
	((•)) Live streaming available

	Training and workshops
15 OCT 2024	EU - Webinar: IP Management in ICT Projects
	((•)) Live streaming available

	Training and workshops
21 OCT 2024	EU - Webinar: Patents and Innovation
	((•)) Live streaming available

	Training and workshops
22 OCT 2024	EU - Webinar EPO Coop: Patent protection for EU funding beneficiaries - MedTech
	((•)) Live streaming available

	Training and workshops
22 OCT 2024	EPO Event: Patents and Innovation in European Universities
	((•)) Live streaming available

	Training and workshops
24 OCT 2024	EU-13 Roadshow: Strengthening IP Awareness and Community Engagement in the Widening Countries - Novi Sad
	◎ Novi Sad, Serbia

EU-13 Roadshow

Strengthening IP Awareness and Community Engagement in the Widening Countries

24 October
Novi Sad, Serbia

29 October
Brno, Czechia

European
IP Helpdesk

- Enhance the dissemination of IP-related knowledge

- Provide innovation support to SMEs, researchers, and EU beneficiaries from EU-13 and Widening countries.

Register for Novi Sad, Serbia

Register for Brno, Czechia

Thank you!

- www.ec.europa.eu/ip-helpdesk

- helpline@iprhelpdesk.eu
- training@iprhelpdesk.eu

- X @iprhelpdesk

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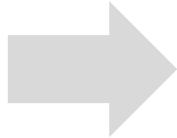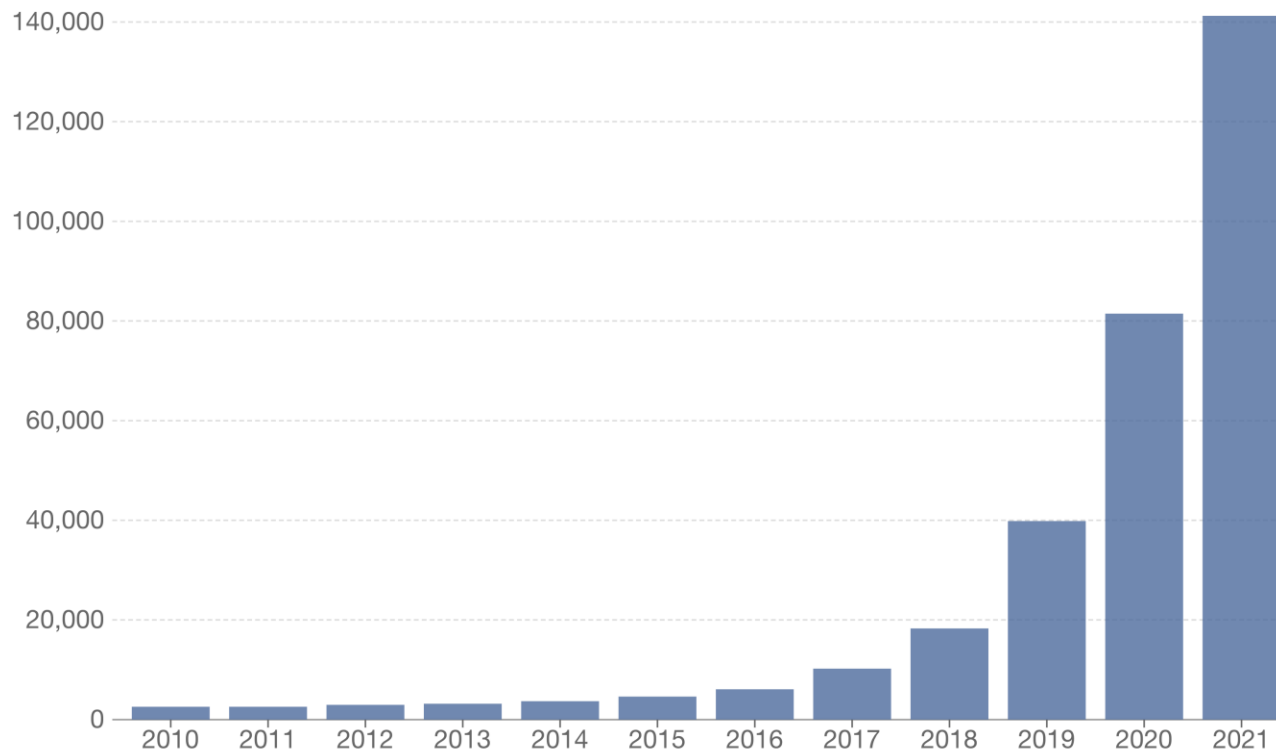# Increase in Patent Applications

Annual patent filings for artificial intelligence technologies globally
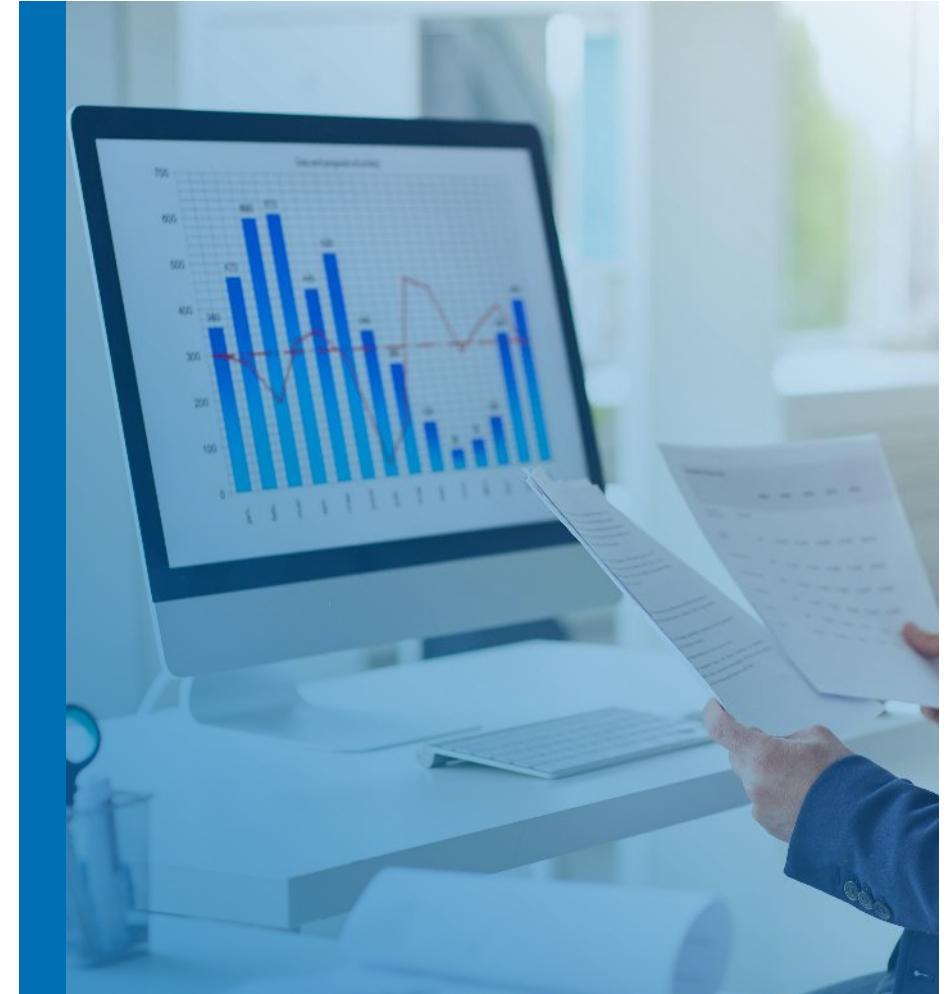
Our World in Data

Source: Center for Security and Emerging Technology via AI Index Report (2022)
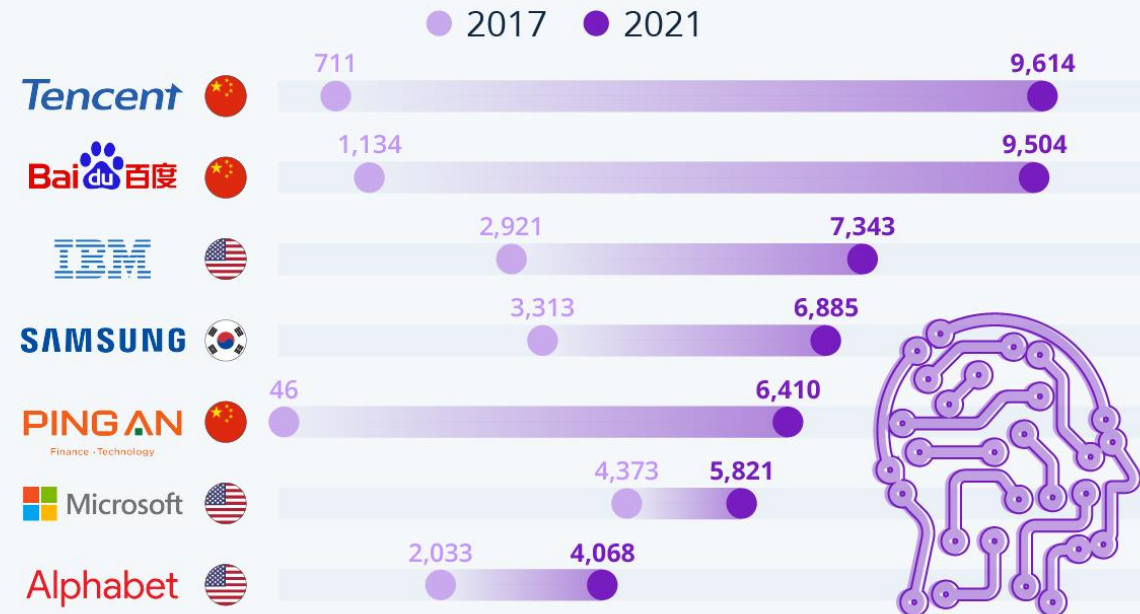OurWorldInData.org/artificial-intelligence • CC BY
Note: Based on a search of relevant codes and keywords in the Cooperative Patent Classification and International Patent Classification systems.

Picture source: Freepik.com

The Companies Holding the Most AI Patents

Number of active AI and machine learning patent families held by company*

● 2017   ● 2021

Company	2017	2021
Tencent 🇨🇳	711	9,614
Baidu 百度 🇨🇳	1,134	9,504
IBM 🇺🇸	2,921	7,343
SAMSUNG 🇰🇷	3,313	6,885
PING AN Finance · Technology 🇨🇳	46	6,410
Microsoft 🇺🇸	4,373	5,821
Alphabet 🇺🇸	2,033	4,068

* Largest owners in 2021
Source: LexisNexis PatentSight

statista

European AI Act

- Common regulatory and legal framework

- Agreed by Parliament and Council

- Parliament amendment on IP

- Entering into Force

Picture source: Freepik.com

IP and Artificial Intelligence

Data ownership

Database Rights

Contractual Rights

Patents

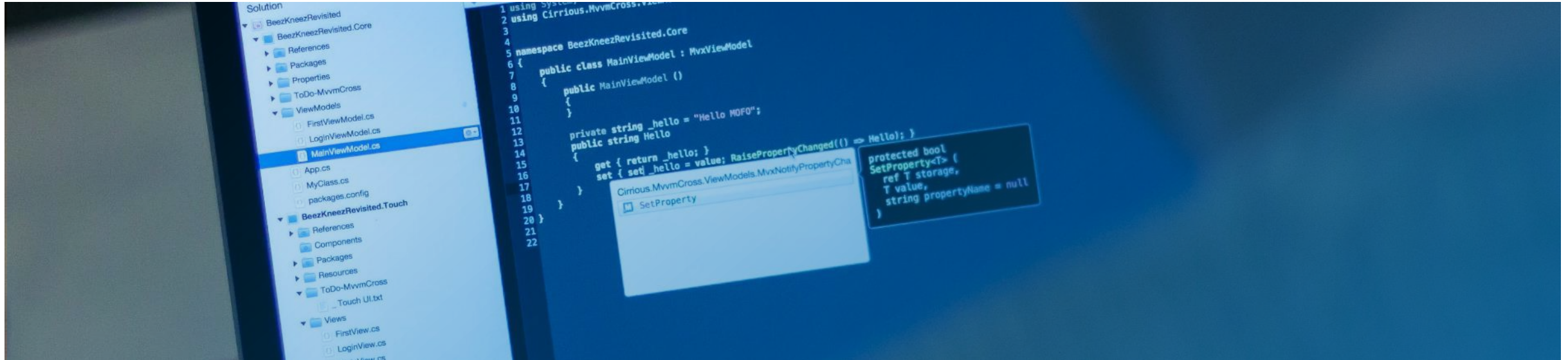Picture source: Pixabay.com

Data Rights and Ownership

Picture source: Freepik.com

Who owns data?

Can we really talk about "ownership"?

Different countries have different legal concepts

European Commission has proposals for several data related acts, including a Data Governance Act
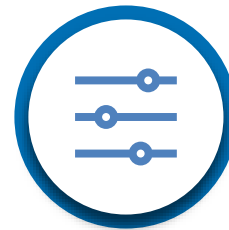
Copyright

Copyright Ownership

Level of Creativity Required for Copyright Protection

Data per se will not have this level

Software is protected – under Berne Convention

Picture source: Freepik.com

Database Rights (Europe)

Protects
collection of data

€ Excludes
machine
generated
data

Not individual
data items

Picture source: Freepik.com

Contracts

Contractual Arrangements

Use of input data

Curation of data

Exploitation of data

Exploitation of results

Picture source: Freepik.com
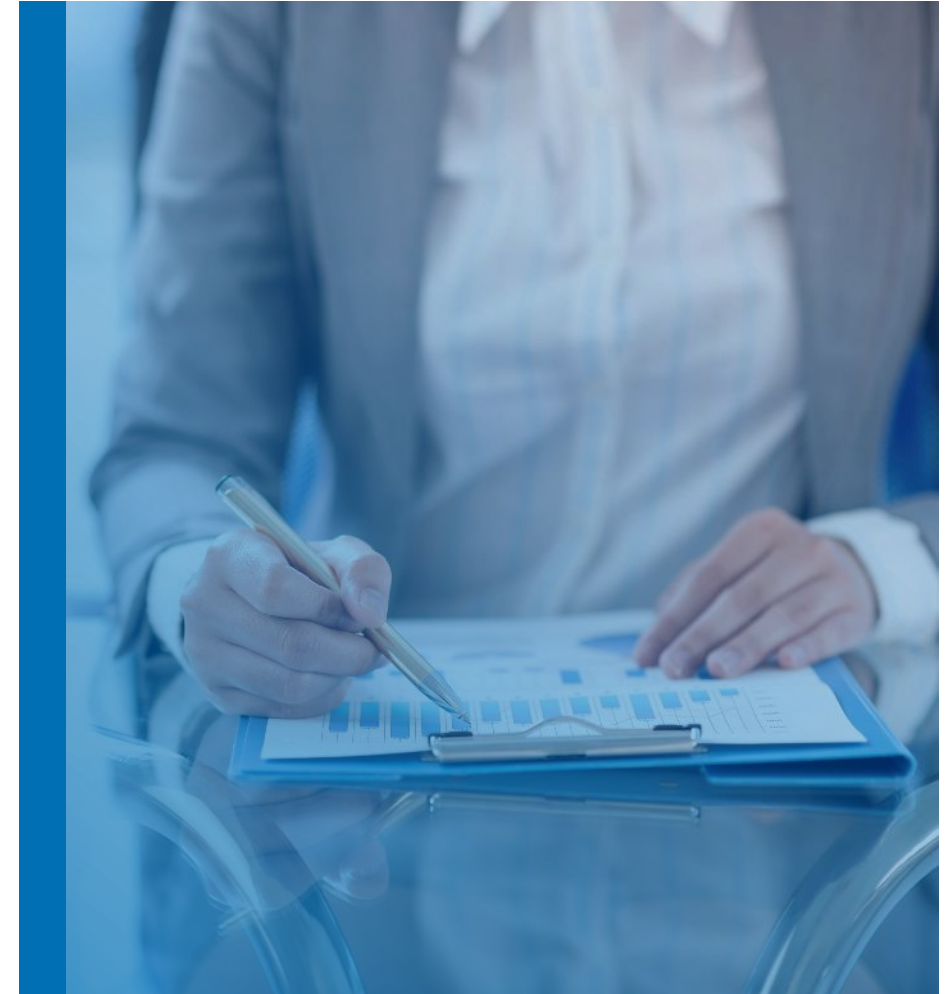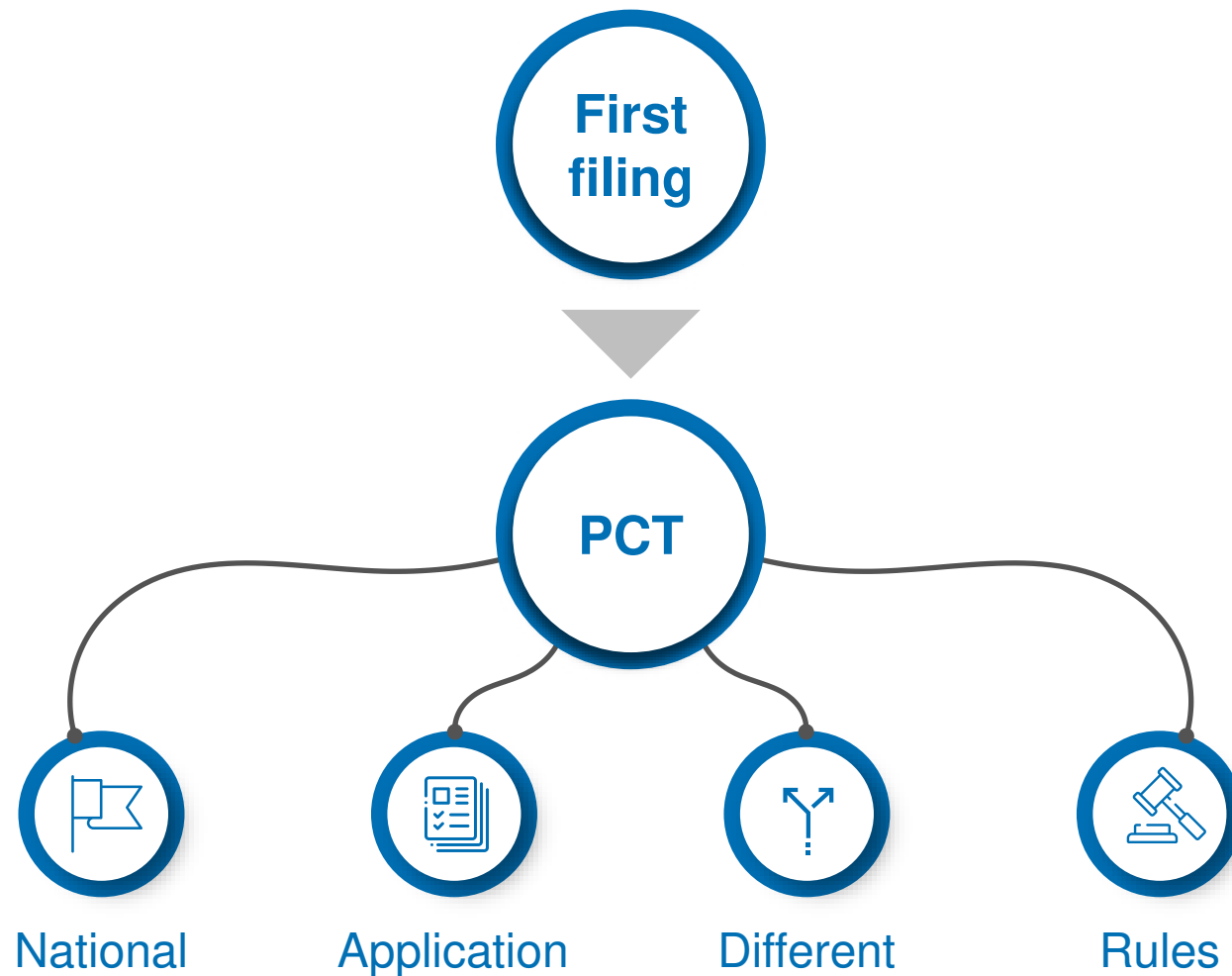
Patent Rights

Filing a Patent Application

First filing

PCT

National

Application

Different

Rules

National Rights

Different countries treat AI differently

AI is often seen as software-based

US – rejects "abstract idea" §101 rejections

EU – "software excluded form patents per se"

Picture source: Freepik.com

Focus on Europe

● European Patent
  Countries
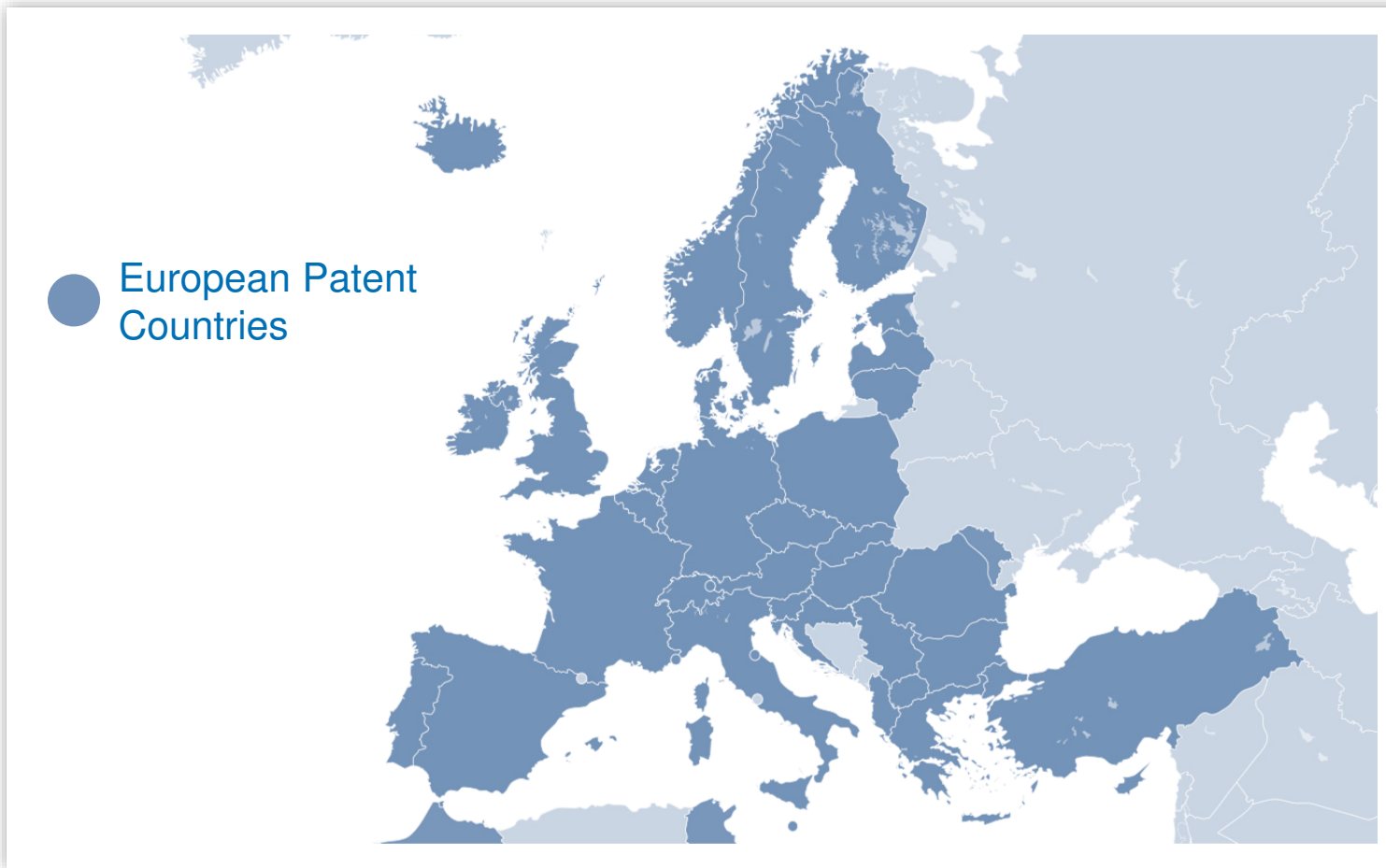
Picture source: European Patent Office
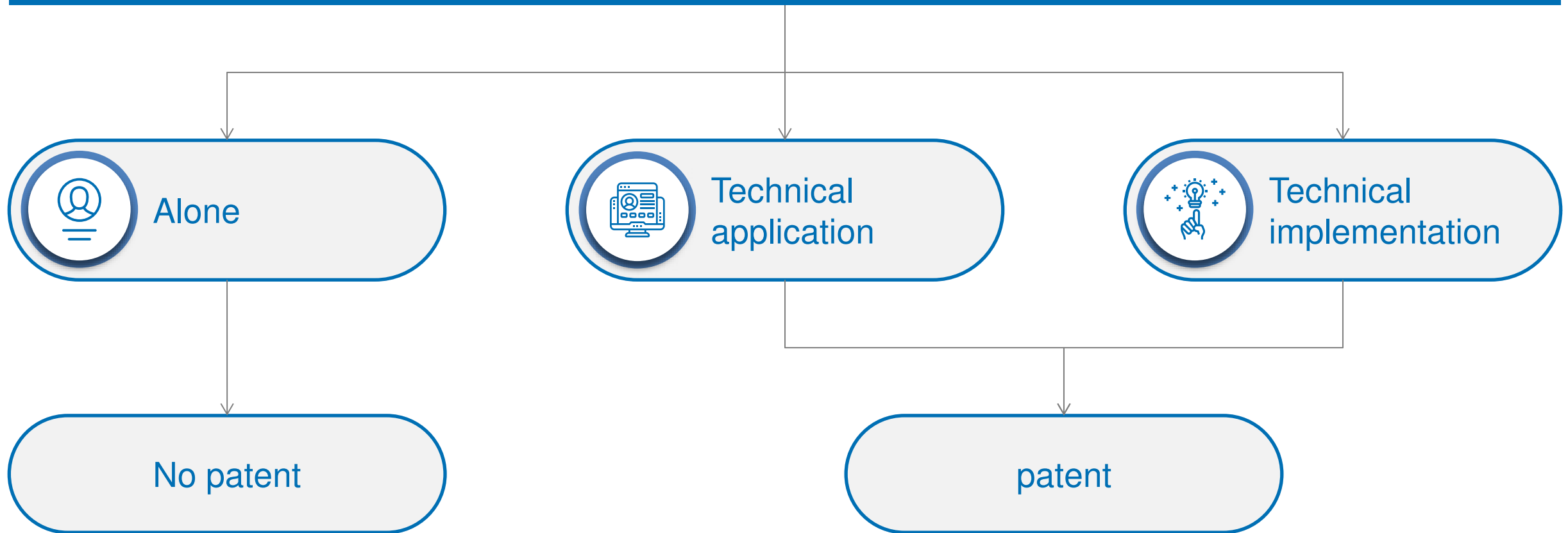
Picture source: google.com/maps

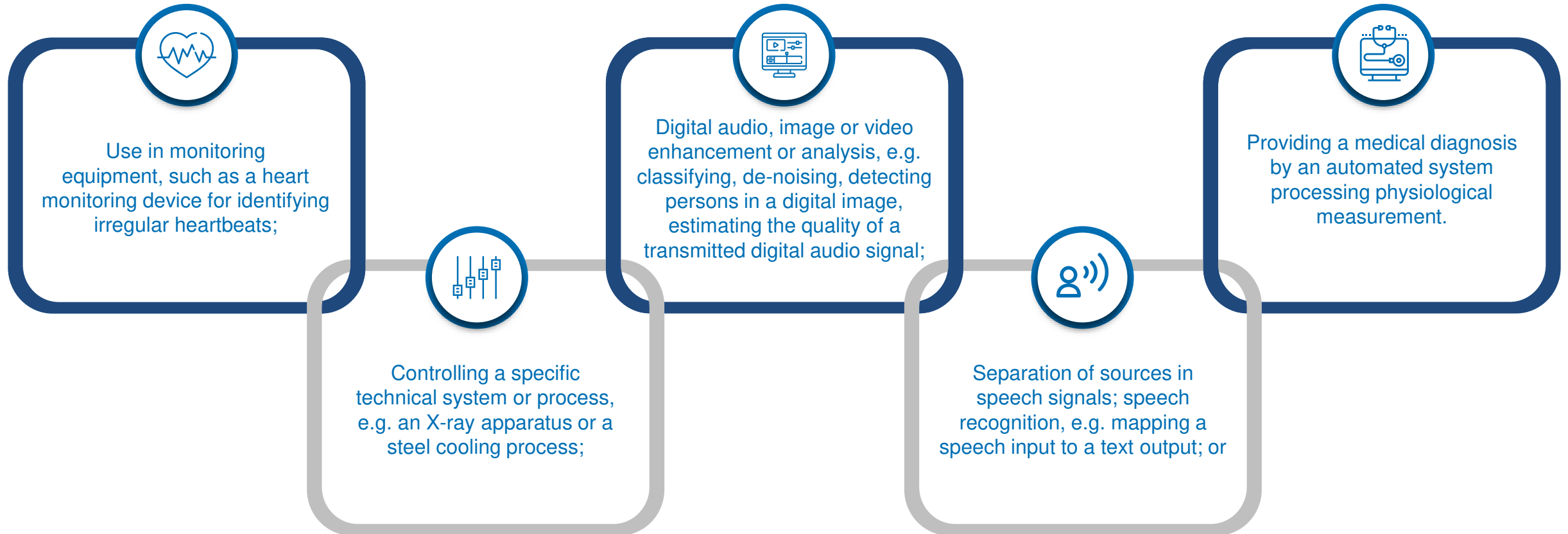## II. Guidelines for Examination of AI in the EPO (Nov 2019 & March 2021)

Examined as inventions involving mathematical methods

Alone

Technical application

Technical implementation

No patent

patent

Technical Application

First Case – Technical Application of a mathematical model

Use in monitoring equipment, such as a heart monitoring device for identifying irregular heartbeats;

Controlling a specific technical system or process, e.g. an X-ray apparatus or a steel cooling process;

Digital audio, image or video enhancement or analysis, e.g. classifying, de-noising, detecting persons in a digital image, estimating the quality of a transmitted digital audio signal;

Separation of sources in speech signals; speech recognition, e.g. mapping a speech input to a text output; or

Providing a medical diagnosis by an automated system processing physiological measurement.

This technical purpose must be specific

Technical Implementation

Second Case - Technical Implementation of a mathematical model

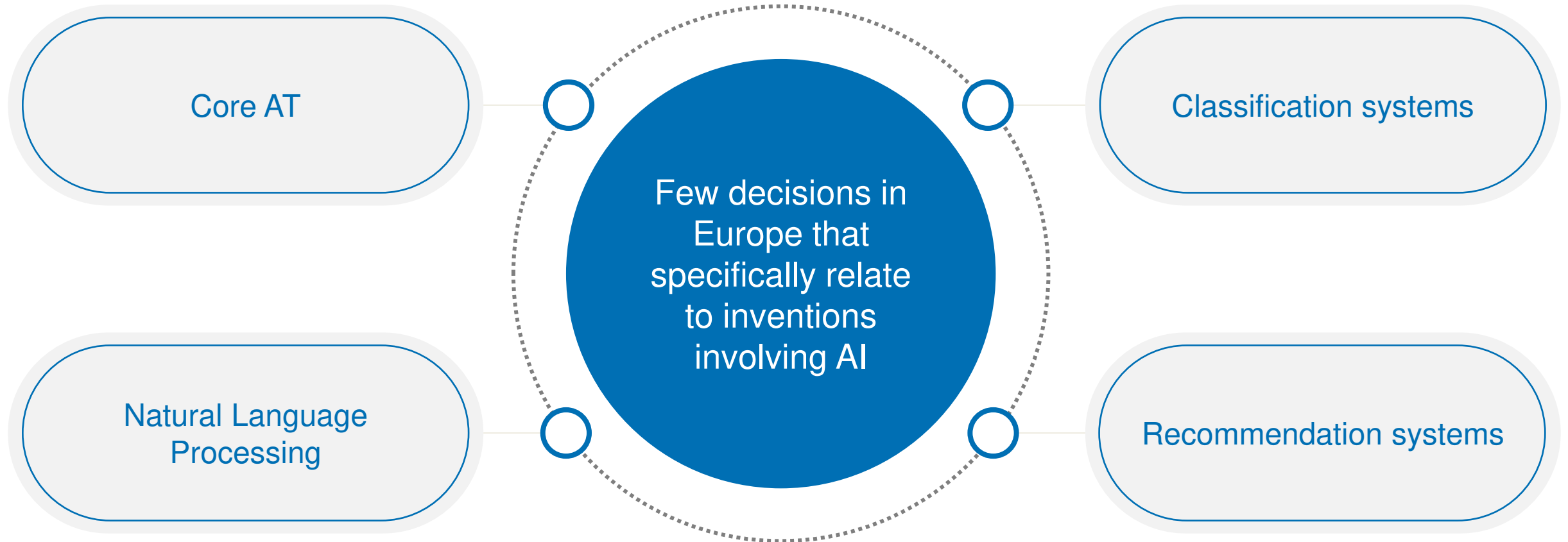Mathematical method is **particularly adapted** for that implementation.

Data collection

Interaction between hardware elements to collect the data

Picture source: Istock.com

Patentability of Some AI Technologies

Core AT

Classification systems

Few decisions in Europe that specifically relate to inventions involving AI

Natural Language Processing
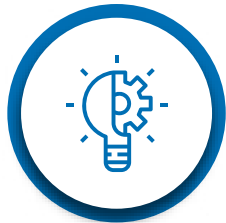
Recommendation systems

Core AI

Fundamental building blocks of AI and machine learning, as opposed to the applications of AI

Difficult to file patent applications on innovations in this "Core AI". EPO considers it not to be "technical".
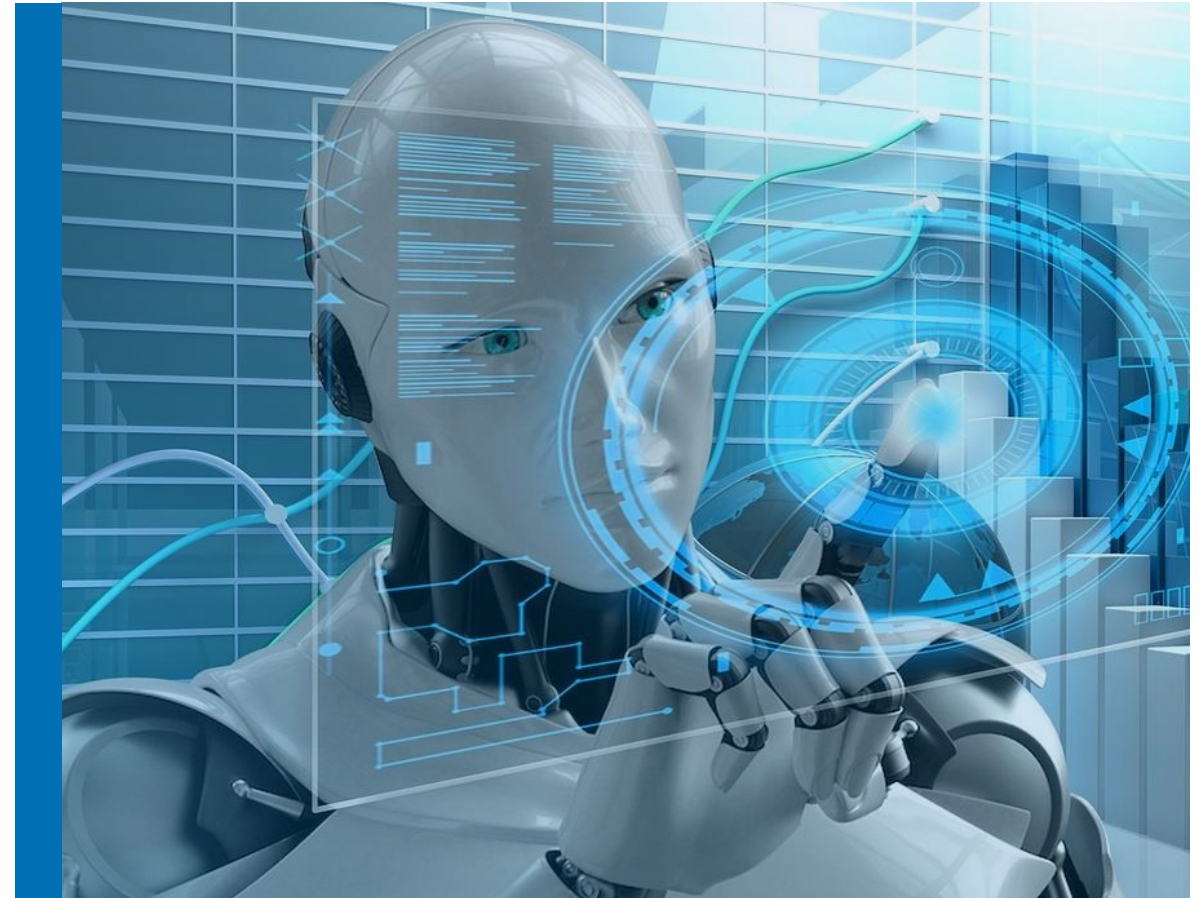
Overcome by specifying in detail

Implementation of the system, e.g. in chip – see Emotional Perception [2023] EWHC 2948 (Ch)

Application of algorithm
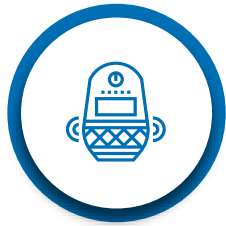

Picture source: Pixabay.com

Natural Language Processing

Allows a computer to interpret inputs, and to generate outputs, in languages such as English, German or Japanese.
Example – Amazon's Alexa System

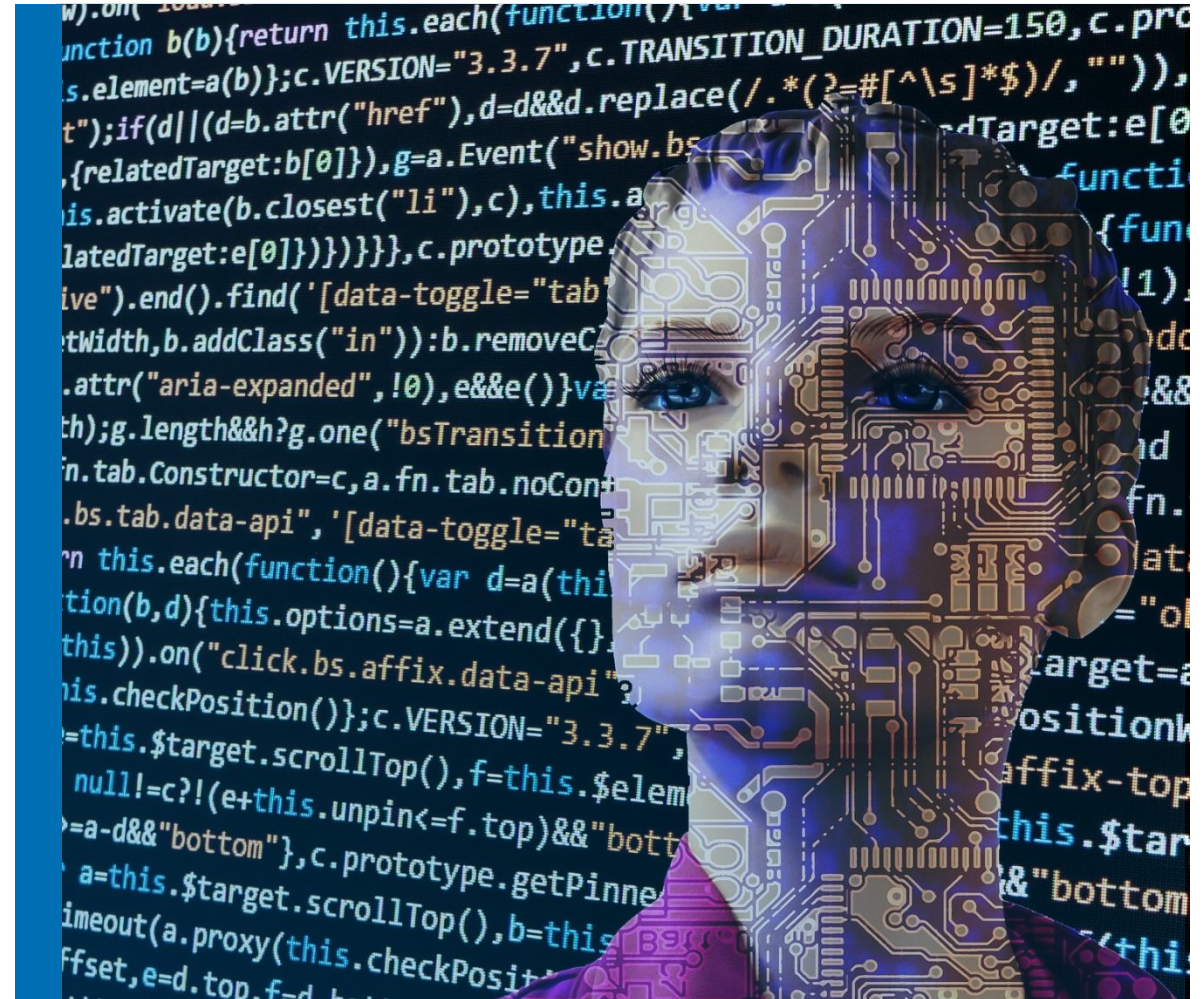These virtual assistants use a range of NLP techniques, such as

Speech recognition to transcribe a user's speech into text

Natural language understanding;

Natural language generation to produce a response.

Picture source: Pixabay.com

EPO considers some NLP techniques to be more patentable than others

Speech recognition, which the Guidelines expressly recognize as a "technical purpose" is readily patentable
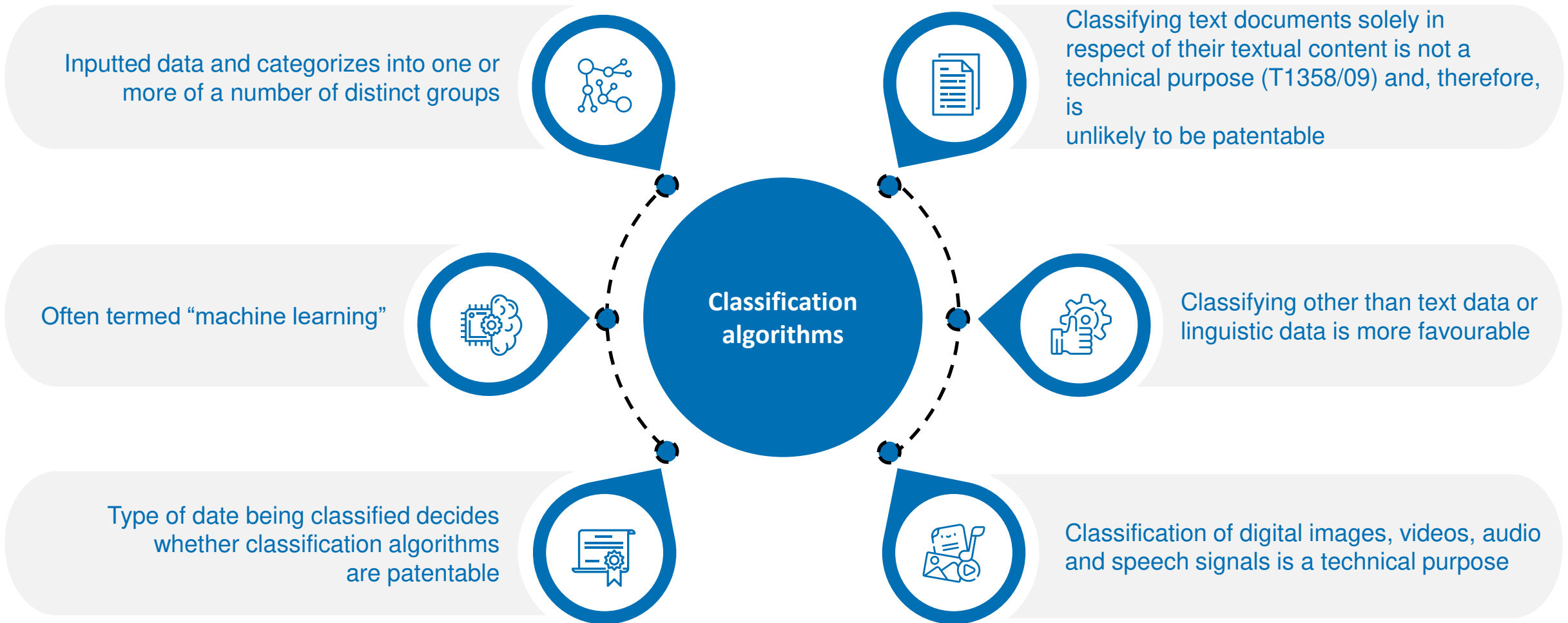
Natural language understanding or comprehension, is considered more difficult to patent

NLP is not a recent technology and the difficulties in patenting NLP, and other technologies involving linguistics, are longstanding

Picture source: Istock.com

Classification Algorithms

Inputted data and categorizes into one or more of a number of distinct groups

Classifying text documents solely in respect of their textual content is not a technical purpose (T1358/09) and, therefore, is
unlikely to be patentable

Often termed "machine learning"

Classification algorithms

Classifying other than text data or linguistic data is more favourable

Type of date being classified decides whether classification algorithms are patentable

Classification of digital images, videos, audio and speech signals is a technical purpose

Recommendation Systems

Recommendation systems provide suggestions for content that is likely to be of interest to a particular user

Book selling websites often employ a recommendation system to suggest new books that a reader might enjoy

amazon.com

Great commercial significance but extremely difficult to patent

Picture source: Freepik.com

Claiming AI-Related Inventions

AI-related inventions may have three potentially patentable aspects

Generating training data for use in training a model, such as an artificial neural network;

Training the model using the training data (machine learning); and

Using the trained model to analyze new data

Each of these aspects should have <u>separate</u> independent claims

Picture source: Istock.com

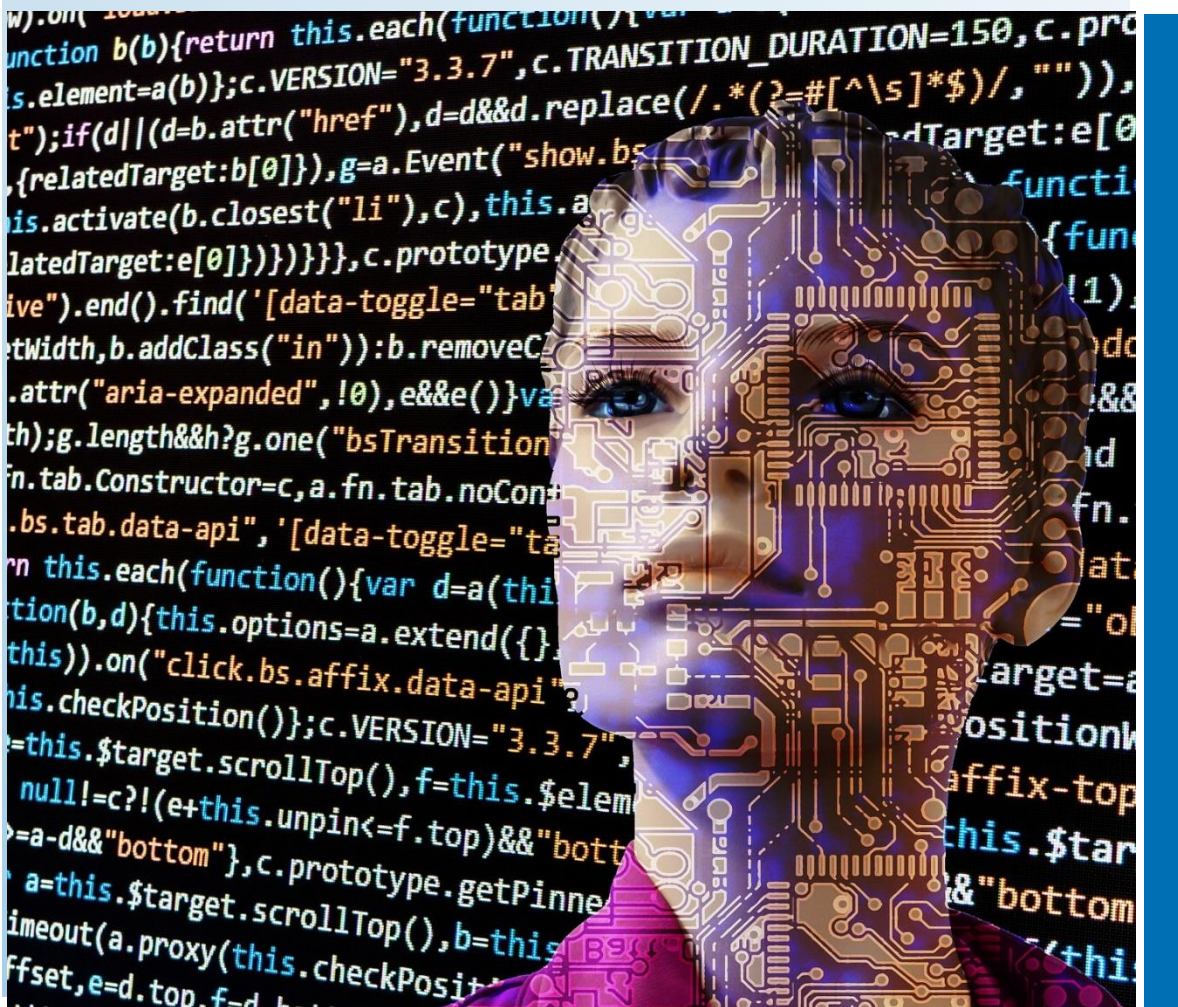Trained model may be difficult to define in concrete technical terms

"Product-by-Process" claim e.g., Emotional Perception

Even if a product-by-process claim is not allowable, a well-drafted claim to a method of training a model will confer protection on the model itself under Article 64(2) EPC

Picture source: Freepik.com

Inventive Step

Not "could" the skilled person arrive at the invention but "would" they do so?

- Large number of parameters
- No obvious relationship
- Human selection of training parameters

Problem-Solution approach is required
Solution must be in the technical sphere

Picture source: Freepik.com

AI as Inventor or Creator

EPO US UK : No (EPO - J0008/20)
South Africa: Yes
Germany: No – but include in description

US Copyright Office: Creator must be a human being

"...the inventor designated in a European patent must be a natural person ... the understanding of the term inventor as referring to a natural person appears to be an internationally applicable standard, and that various national courts have issued decisions to this effect."

HELLO
I AM...
PATENTED

Picture source: Adobe
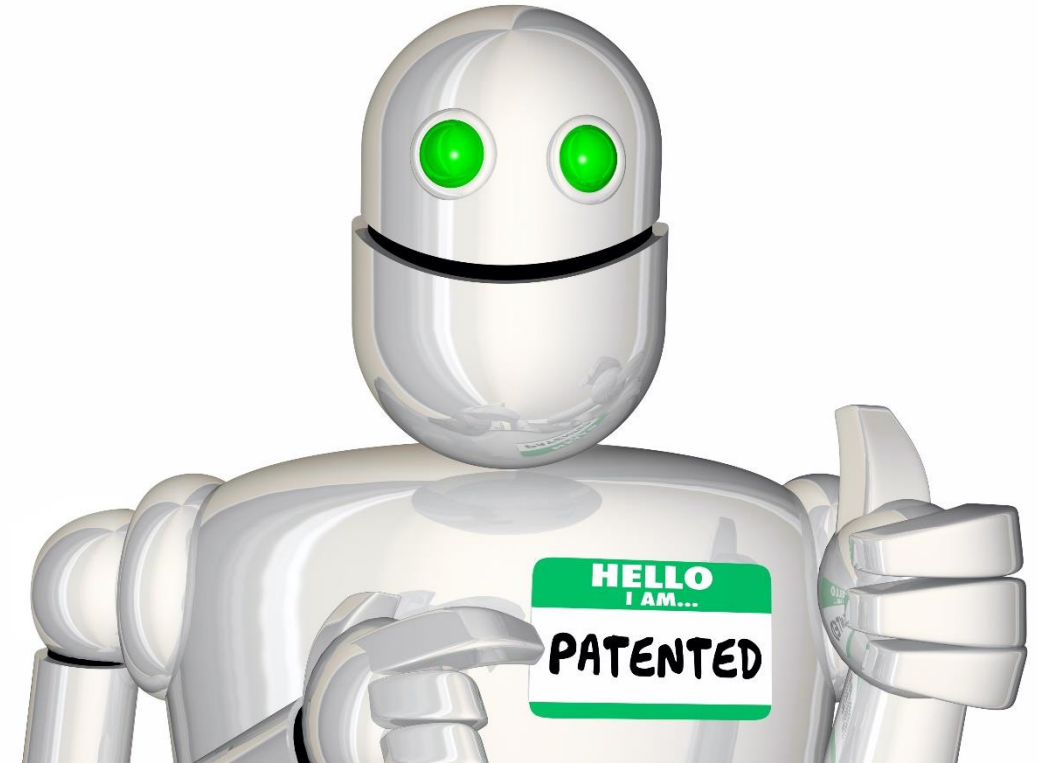
ChatGPT

IP and other legal issues from massive language models

Uses copyrighted information +
non-copyrighted data

Produces useful and useless
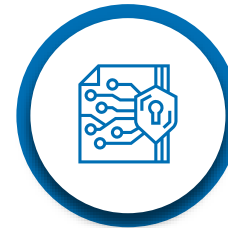information

Liability?

Many unanswered questions

Picture source: Istock.com

Conclusions – Protection of AI Innovations

Data can be protected

Copyright for programs

Patenting possible in certain circumstances

Picture source: Istock.com

Contact

Thanks!

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Picture source: Freepik.com