European
IP Helpdesk

www.iprhelpdesk.eu

European IP Helpdesk

Stay ahead of the innovation game.

IP and Artifical Intelligence
Advanced Webinar + Update

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: 44 ambassadors from 27 EU countries

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

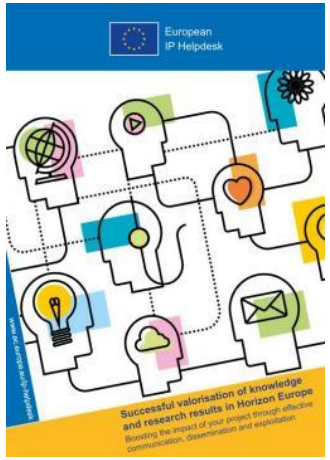
Ambassadors
local IP support throughout Europe

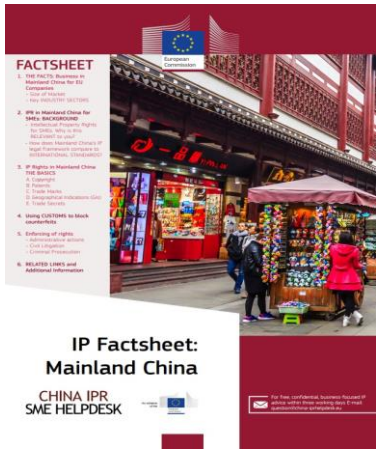
Events
info point at key networking events and conferences

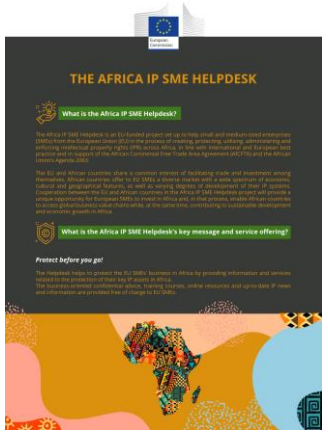
ec.europa.eu/ip-helpdesk

The EC IP Helpdesks

EC IP (SME) Helpdesk Hub – Gateway to Information







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

Upcoming Webinars

Europa - Upcoming events

06 DEC 2023

Training and workshops

EU - Webinar: IP and Artificial Intelligence - Advanced

Live streaming available

07 DEC 2023

Training and workshops

Plant Variety

Live streaming available

11 DEC 2023

Training and workshops

EU - Webinar: Addressing IP impact and innovation in EU projects

Live streaming available

12 DEC 2023

Training and workshops

EU - Webinar: Maximizing the Impact of Horizon project (2020/HEU) results

Live streaming available

13 DEC 2023

Training and workshops

EU - Webinar & Horizon Results Platform: Thinking international - International business Opportunities

Live streaming available

Ambassador Scheme

- **Cooperation scheme** with the Enterprise Europe Network (EEN): 44 ambassadors – 27 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**

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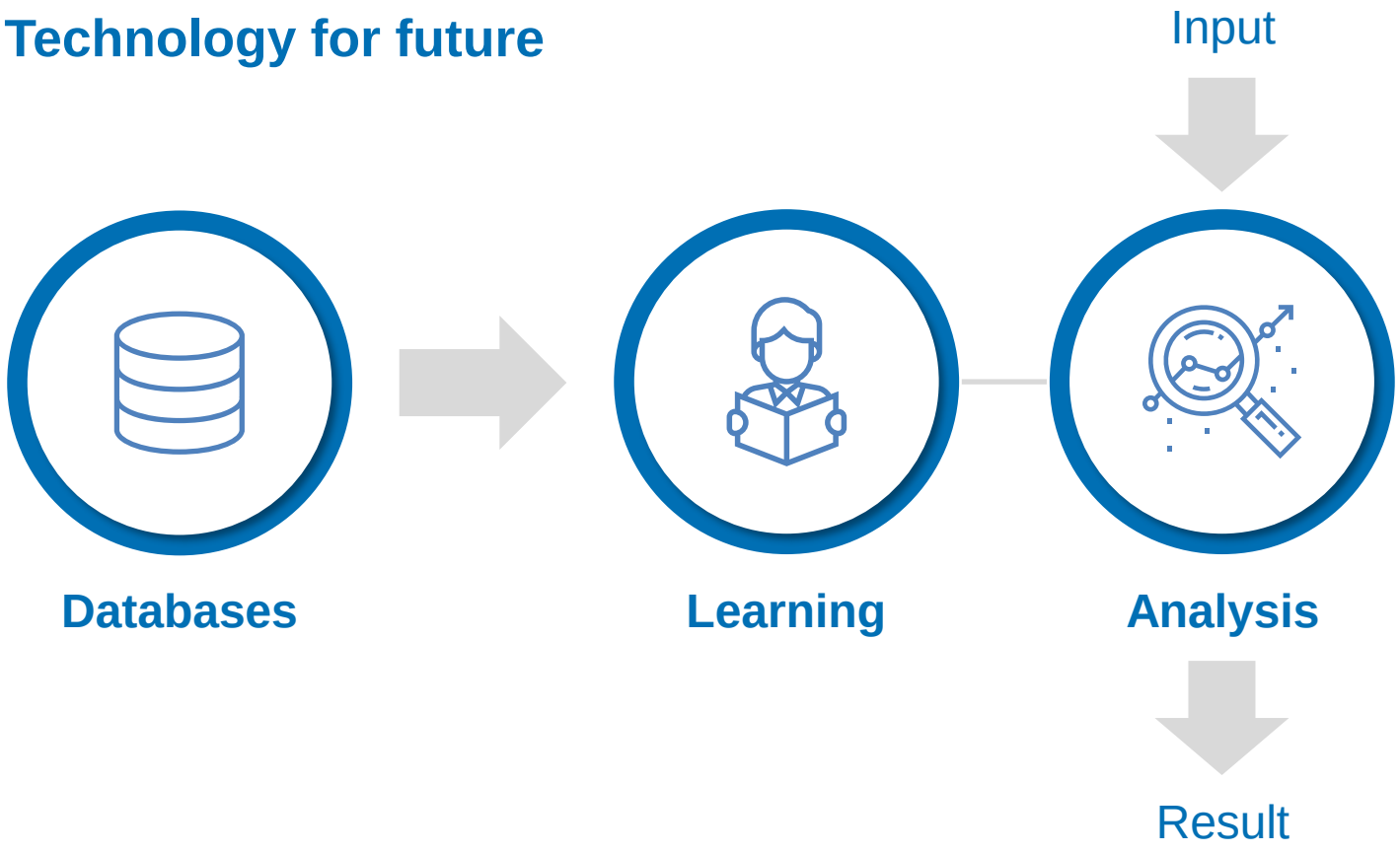
About me

- BA Physics, Oxford University
- MSc Physics, Sheffield University
- PhD Semiconductors Sheffield University
- EPO Examiner – the Hague
- IBM Germany – Patent Engineer
- W.L.Gore & Associates – European IP Counsel
- Founding Partner, Sonnenberg Harrison
- Advisory Board Member
- IP Strategy

Artificial Intelligence

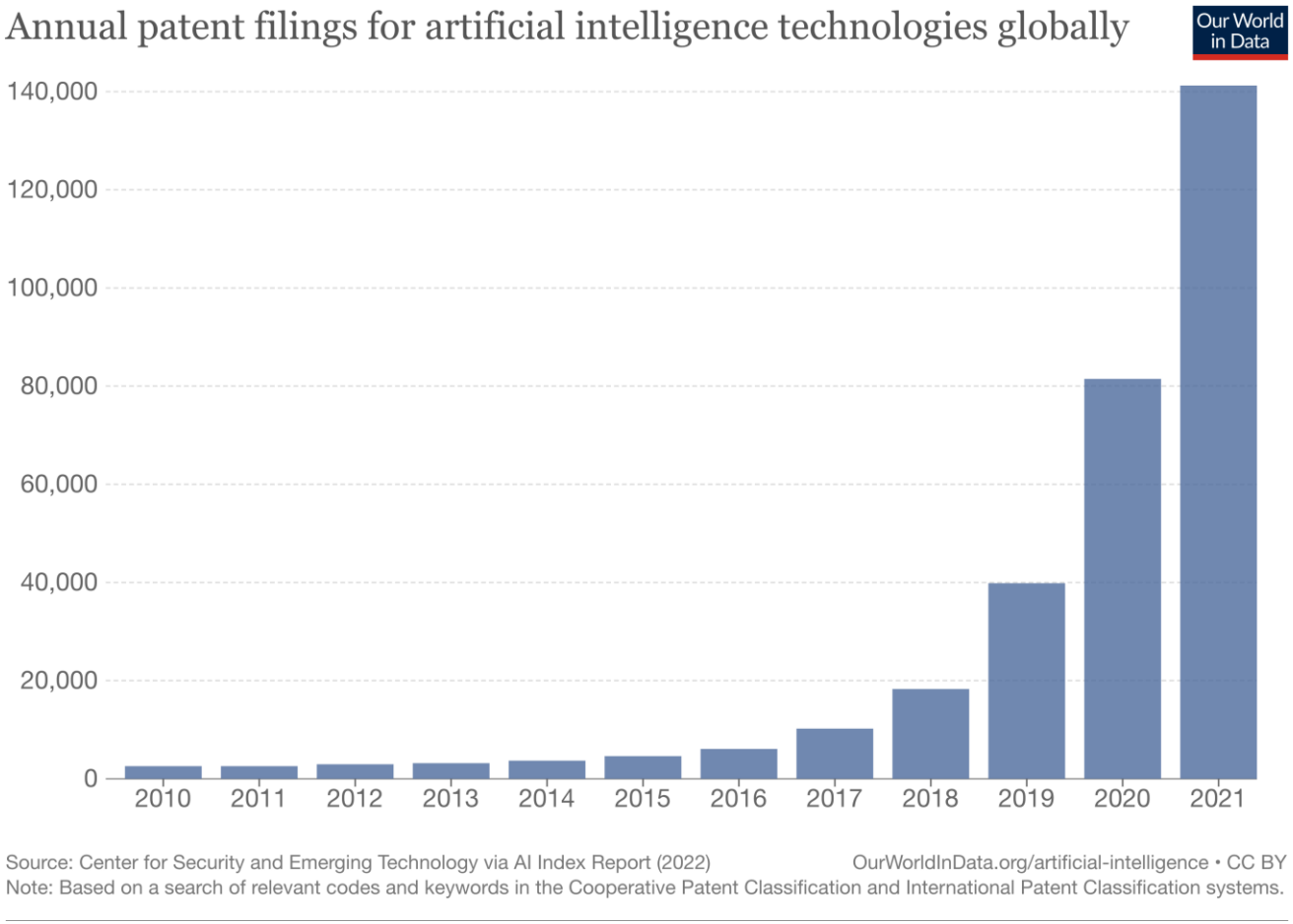
What do we mean?

Technology for future



Picture source: Istock.com

Increase in Patent Applications



Picture source: Freepik.com

IP and Artificial Intelligence

Data ownership

Trade Secrets

Copyright

Patents

Picture source: Pixabay.com

European Parliament Resolution 20 October 2020

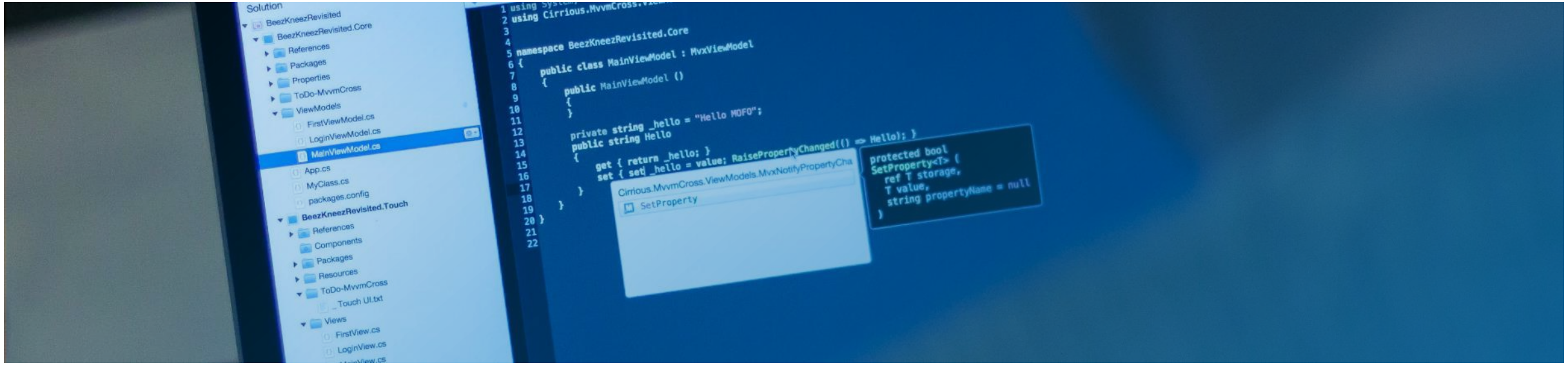
- Importance of IPR Protection
- Economic incentives
- Emphasizes need for technical innovation
- Comprehensive description and notes that this may be a challenge
- No legal personality to AI creations

Picture Source: European Parliament Website

Data Rights and Ownership

Picture source: Freepik.com

Who owns data?



Can we really talk about “ownership”?

Different countries have different legal concepts

Various EU acts will regulate governance of data -> principles of open data.

Contractual relationships most important.

Picture source: Freepik.com

Copyright

Picture source: Freepik.com

Copyright Ownership

Level of Creativity Required for Copyright Protection

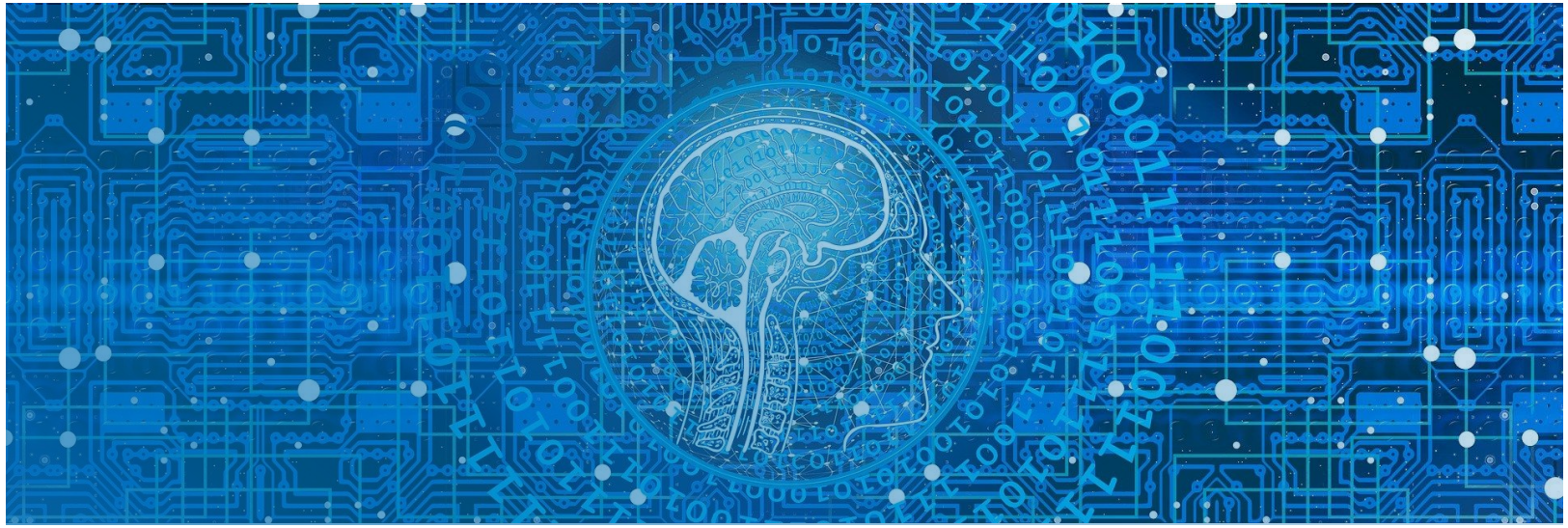
Data per se will not have this level

Compilations of data may enjoy copyright protection

Software is protected – under Berne Convention

Picture source: Freepik.com

Copyright of Generated Works



US: Author of copyright cannot be a computer

UK: Copyright Patent and Design Act 1988

- Computer- generated works
- Owned by Person who made "Arrangements"
- Only one court decision

Europe / Japan Dialogue

- Is copyright possible?
- Who owns the product?

Picture source: Freepik.com
Map: WIkipedia

Infringement

- Use of Images and Text -> Fair Use?

EU Coypright in Single Market Directive:

Art 3: Text and Data Mining allowed by research organisation and cultural institutions for research

Art 4: Text and Data Mining allowed -> but rightsholders can “opt-out”

Image by AgKu from Pixaby

Database Rights (Europe)

Picture source: Freepik.com

Protects collation of data

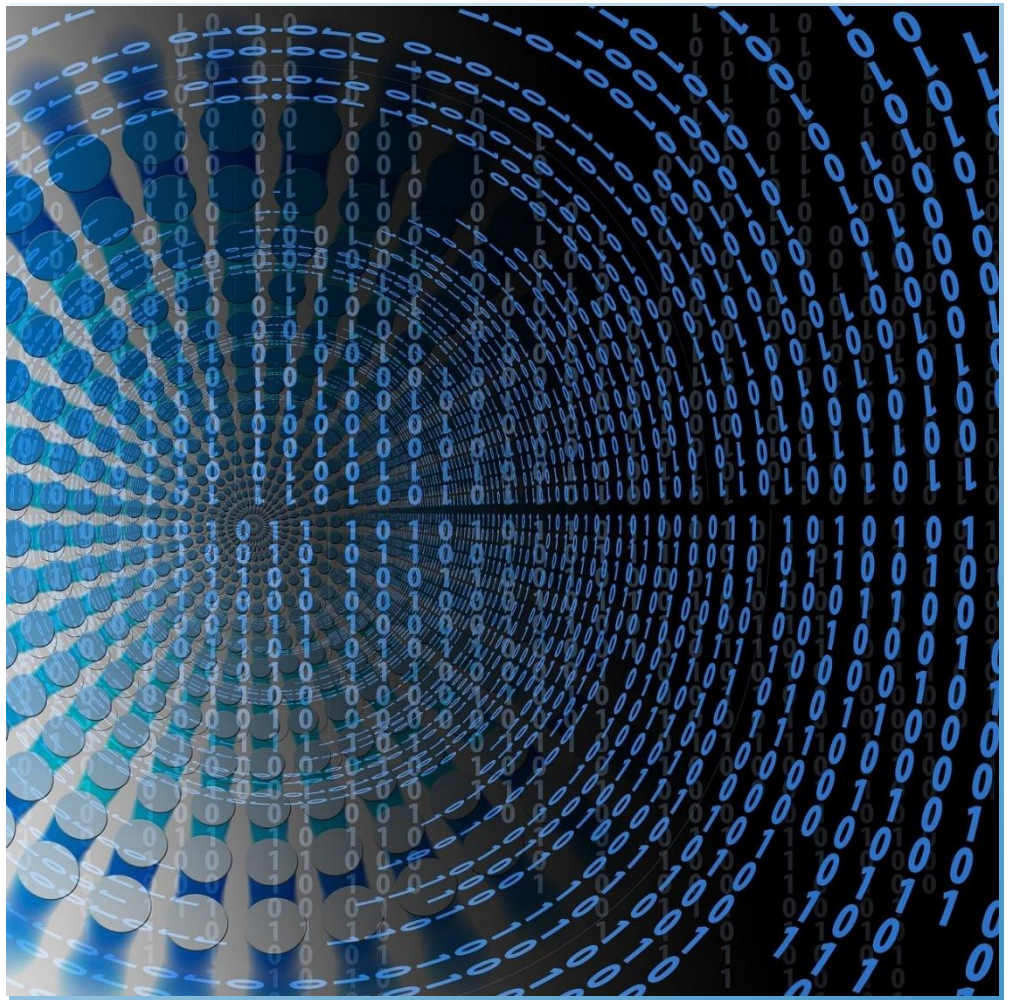
€

Significant Investment

Not individual data items

Picture source: Freepik.com

Database Rights for AI



- European Commission has recognized issue
- Data Governance Act will remove protection for device-generated data
- Databases are valuable assets for Digital Economy
- Principles of Open Data apply to data generated by public authorities

Picture source: Freepik.com

Trade Secrets

Picture source: Freepik.com

Rise of Trade Secrets

IBM Director of Research (Darío Gill):

“balancing trade secrets and patents alongside a style of R&D called open innovation”

From Fortune “**Why IBM is no longer interested in breaking patent records”, Darío Gill, 6 January 2023.**

Source: https://fortune-com.cdn.ampproject.org/c/s/fortune.com/2023/01/06/ibm-patent-record-how-to-measure-innovation-open-source-quantum-computing-tech/amp/

Photograph Stuart Isett/Fortune from Flickr, License link

Patent Rights

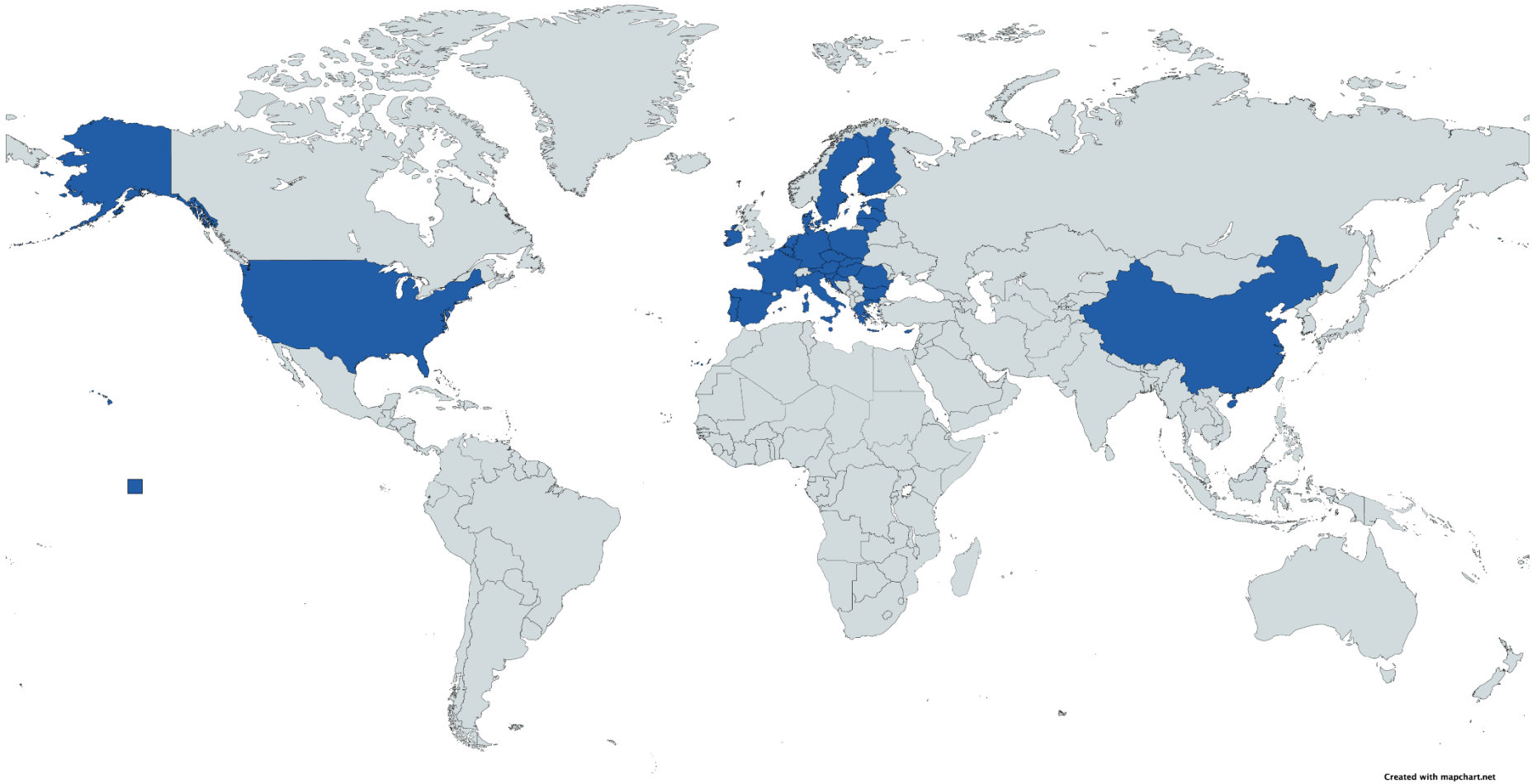
Picture source: Freepik.com

National Rights

Picture source: Freepik.com

- 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”
  Guidelines emphasise that AI is to be treated as mathematical method

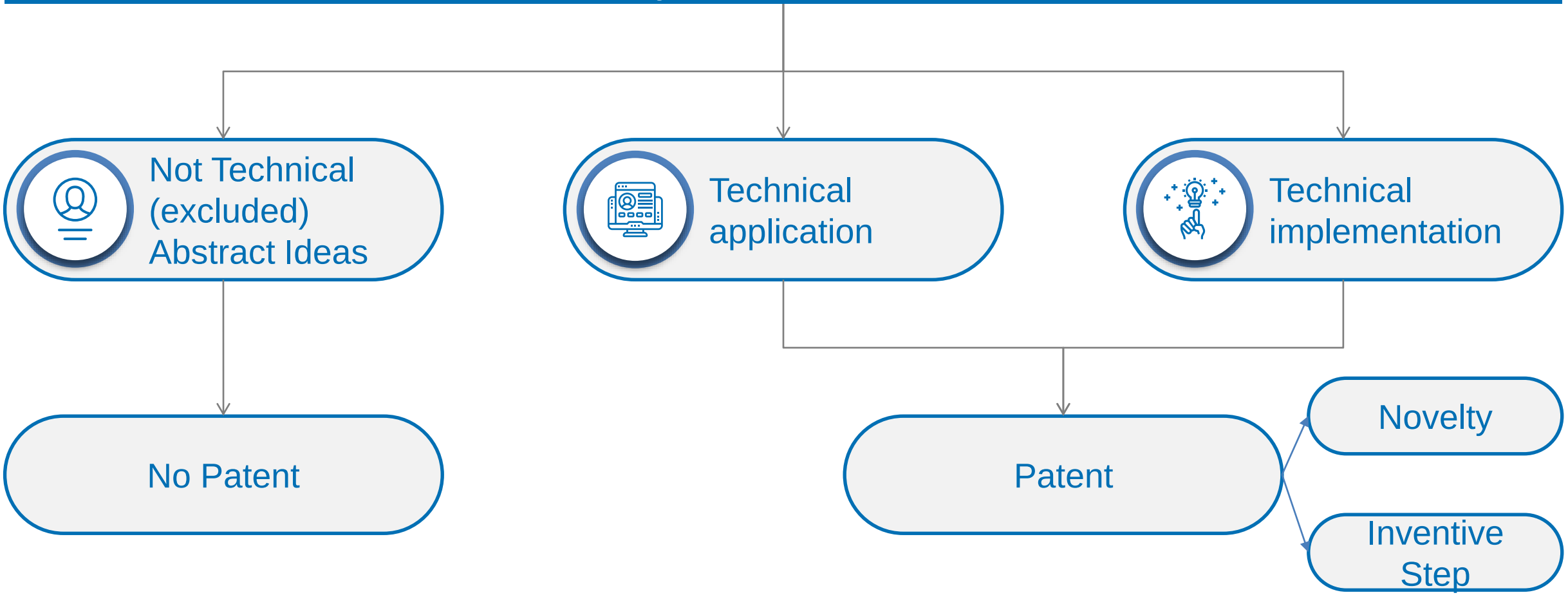
Focus on US and Europe



EPO Test for Patentability

Generalised Approach (“Two-Hurdle” Approach)

Confirmed by G1/19 – Pedestrian Simulation



Overcoming non-technical / abstract objection

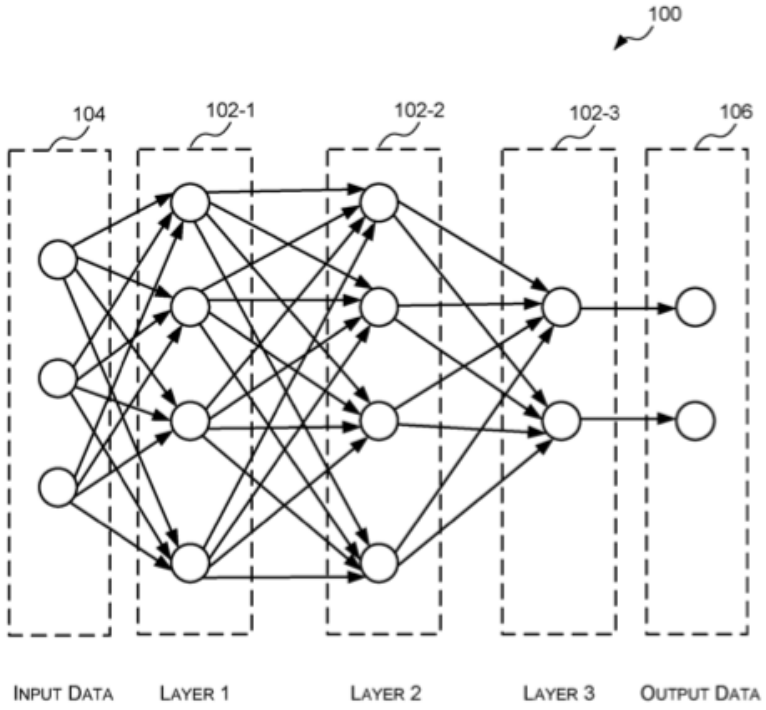
Language of claims is relevant

Computer-Implemented Method

Emphasizing interaction with hardware elements

Picture source: Istock.com

Excluded from Patentability?



- UK Patent Application GB **2574372** (Decision BL O/296/21)
- Implementing Traditional Computer Vision Algorithms As Neural Networks
- Claim: A method of ~~implementing~~ processing images in accordance with a traditional computer vision algorithm ~~as a neural network~~, the method comprising: … mapping traditional computer vision algorithm operations to … neural network primitives..”
- Patentable as technical contribution -> processing images more efficiently (silicon area + processing power)
- EPO objected on clarity grounds + lack of inventive step

[2023] EWHC 2948 (Ch) Perception AI

- **GB2583455** Method of Training Neural Network ..and finding associated content.
- Claims a method and system of providing semantically relevant file recommendations
- AI System is not a program for a computer
- Trained ANN can be regarded as having a technical effect

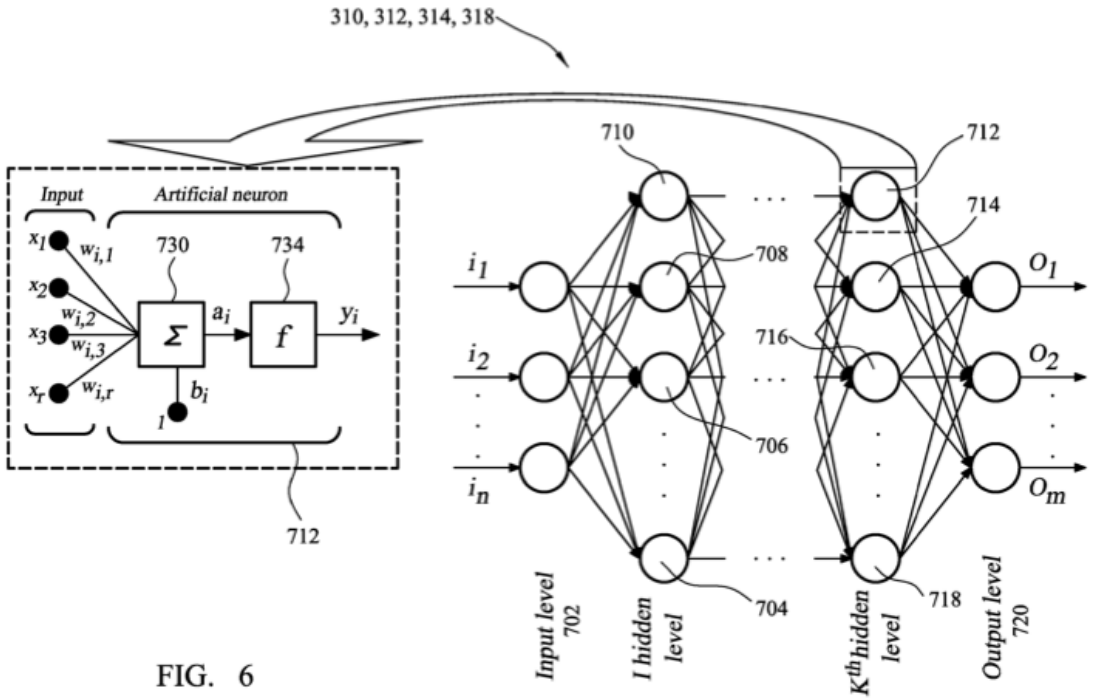
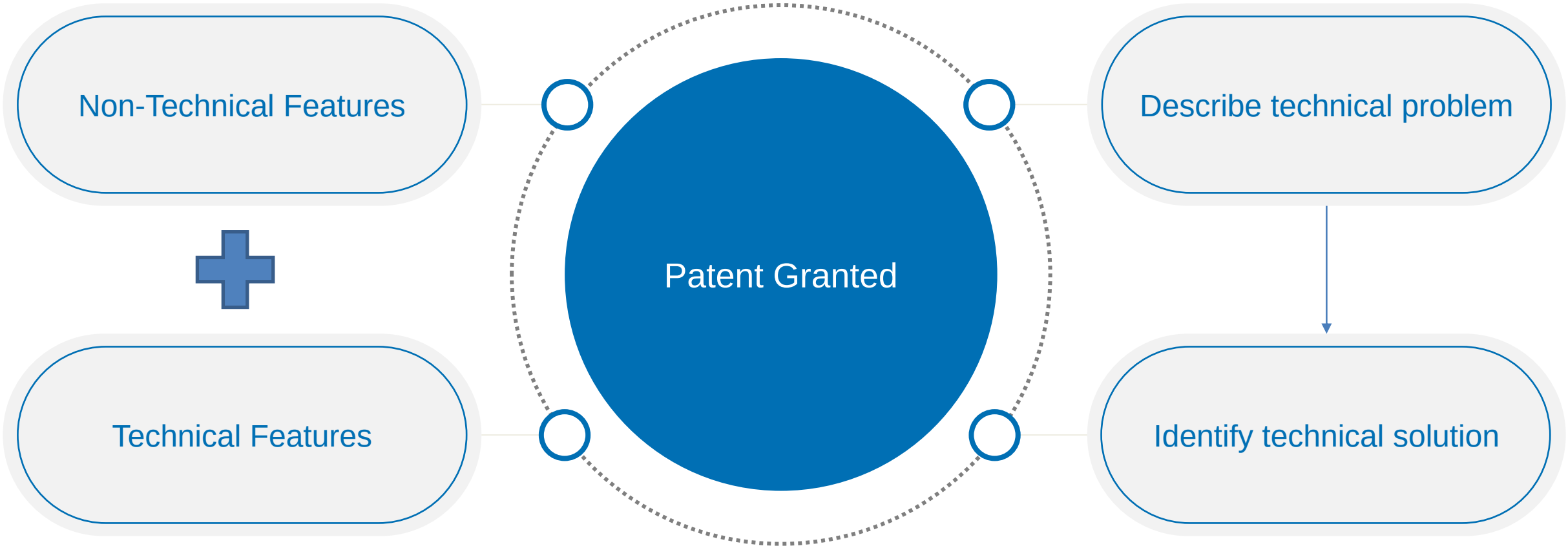


FIG. 6

Inventive Step



Modified EPO Approach – G1/19

Exclusions

Feature contribute to technical character?

Inventive step

Picture source: Freepik.com

Application to Artificial Intelligence

How do we apply the principles of G1/19 “Pedestrian Sinulatio / Bentley” to AI?

Algorithms do not necessarily contribute to technical character of invention

Algorithm must solve a technical purpose

Algorithm contributes to technical solution

Picture source: Istock.com

US PTO Test for Patentability

Statuory Subject Matter

- Process
- Machine
- Manufacture
- Composition of Matter

Judicial Exemptions

- Law of Nature
- Natural Phenomenon
- Abstract Ideas

- Organising Human Activity
- Economic Practices
- Standalone Ideas
- Mathematical Relationships

Additonal Elements

- Improve technology
- Improve functioning of computer
- Application of idea
- Transformation or reduction of article

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

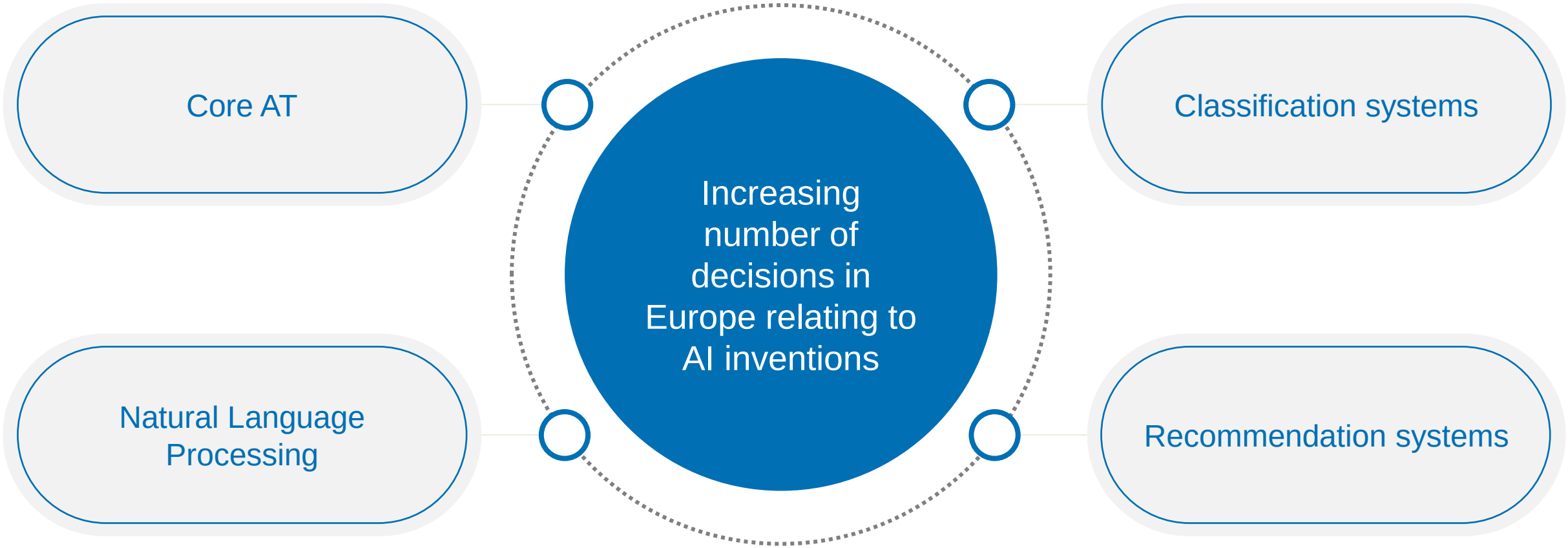
Mathematical method is **particularly adapted** for that implementation.

Data collection

Interaction between hardware elements to collect the data

Picture source: Istock.com

Patentability of Some AI Technologies



Core 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”.

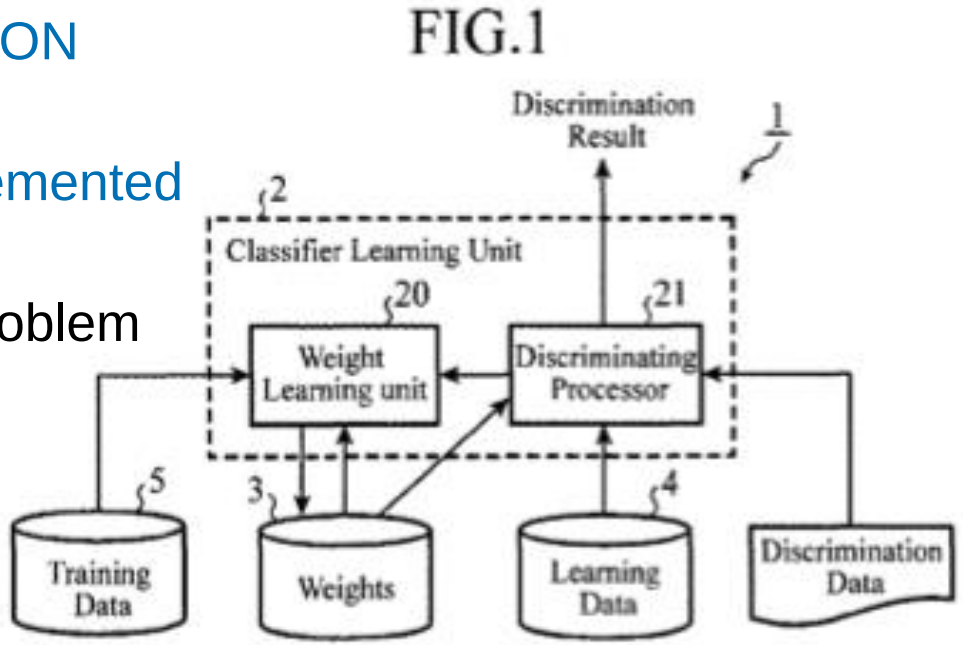
Overcome by specifying in detail

- Implementation of the system
- Working of System in new ways
- New physical combination of hardware
- Application of algorithm to technical operation

Picture source: Pixabay.com

EPO T072/20 : Neural network does not solve a technical problem

- EP3089081A1 HIERARCHICAL NEURAL NETWORK DEVICE, LEARNING METHOD FOR DETERMINATION DEVICE, AND DETERMINATION METHOD
- Claims a hierarchical neural network apparatus implemented on a computer comprising….
- Subject matter of claim did not solve any technical problem
- Had effects ”within the computer”



EPO T0183/20 : Minimisation of Network Bandwidth and Storage of Training Data

- **EP2634707** Recommender Control System Apparatus, Method and Related Aspects
- Claims a method for automatically controlling performance of a recommender system
- Technical problem solved is to reduce the use of network bandwidth and amount of storage in a communications system, including a client device and a recommender system in communication with the client device.

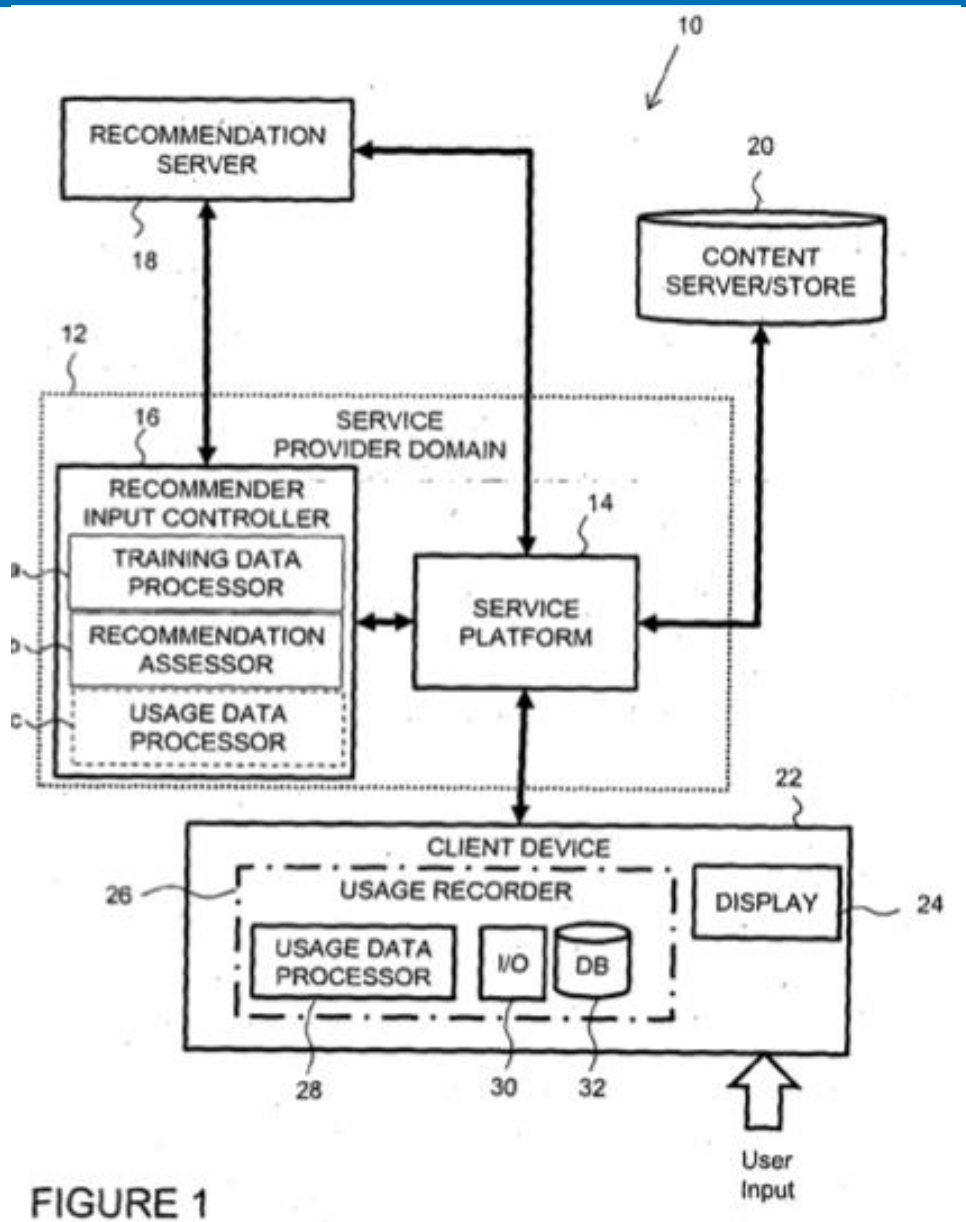


FIGURE 1

Developing an AI-focussed patent strategy

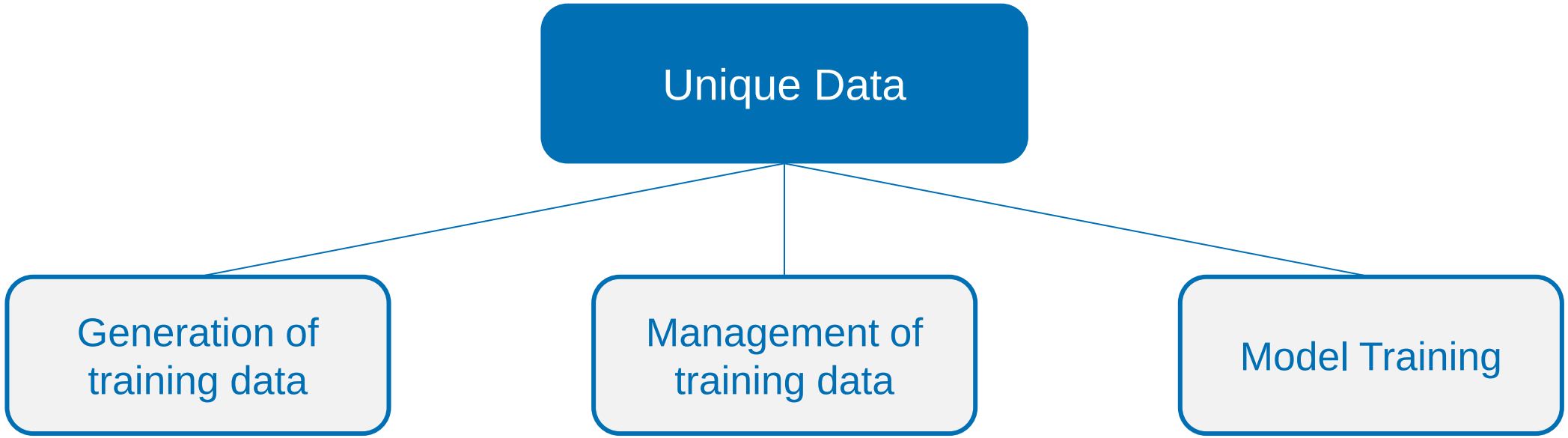
- Identify Customers and Competitors
- Can the ”Infringement” be carried out by a single actor
- Focus on how infringement may take place

Patent Strategy = Business Strategy I

- Devices using AI to make decisions
  - Decisions
  - Model Training
- Products manufactured using AI
  - Model Training
  - Product highlighting AI generated features

Source: Siemens / Beat Weibel https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=454861

Patent Strategy = Business Strategy II



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

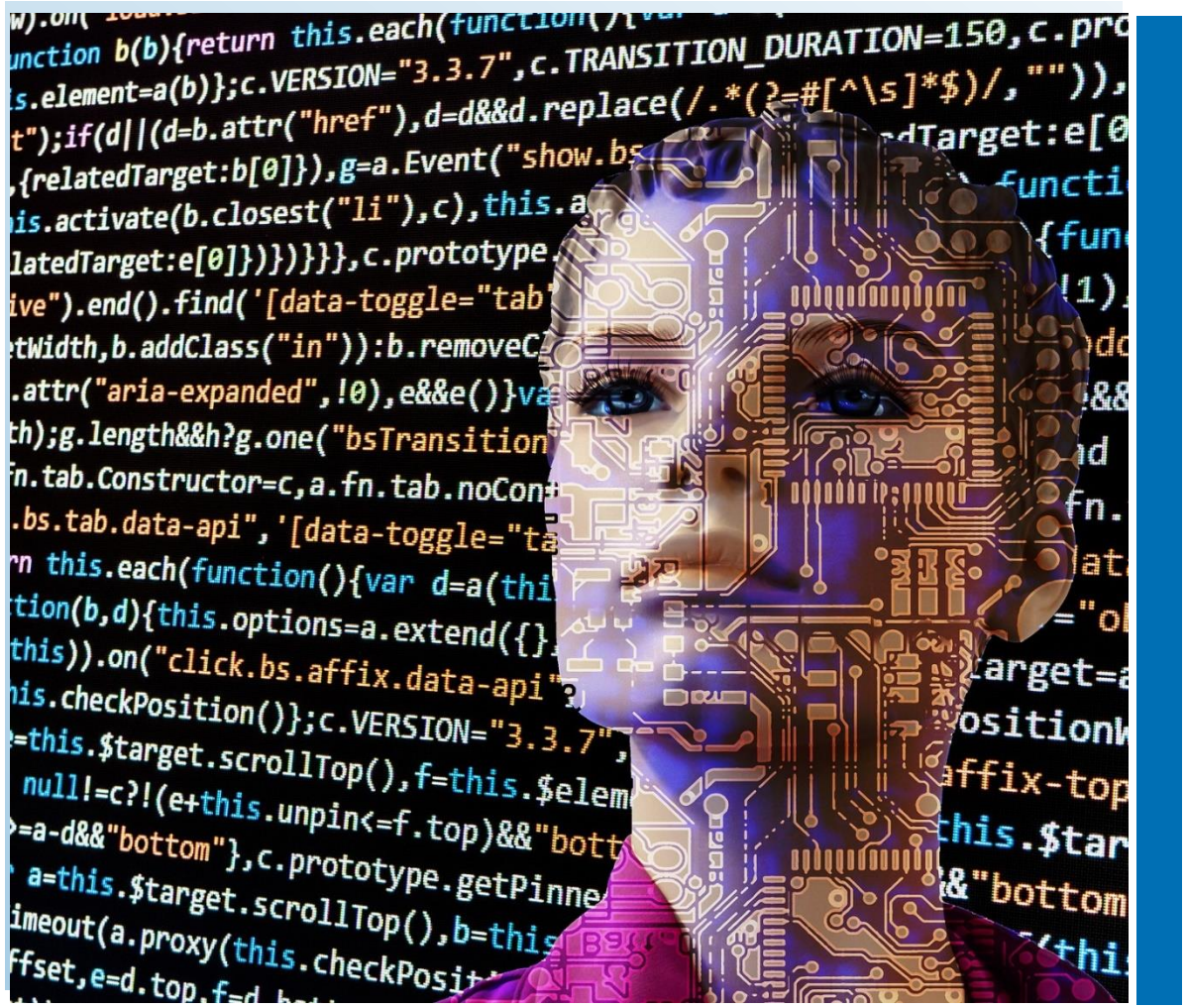
Each of these aspects should have separate independent claims

Picture source: Istock.com

Drafting Claims

1. Method Claims
   - without structural elements
   - protection under Art 64(2) EPC
2. Device Claims
3. Computer Program Product
   - capture stand-alone product
   - database storing elements of data
   - database for/configured to store elements of data
4. Separate claims for training and use of AI systems
5. Claims to each independent entity
   - Web server + client

Inventive Step



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

- Large number of parameters
- Non-convexity
- Human selection of training parameters

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

Picture source: Freepik.com

Could a skilled person combine AI aspects to arrive at any given AI invention

- US 7,542,959
- Feature selection method using support vector machine classifier
- Claim was to a computer-implemented method for predicting patterns in biological data…comprising
- Three Prior Art documents
- Lack of Motivation to combine teachings (“could” but not “would”)

- Extensive disclosure on how data was acquired and processed

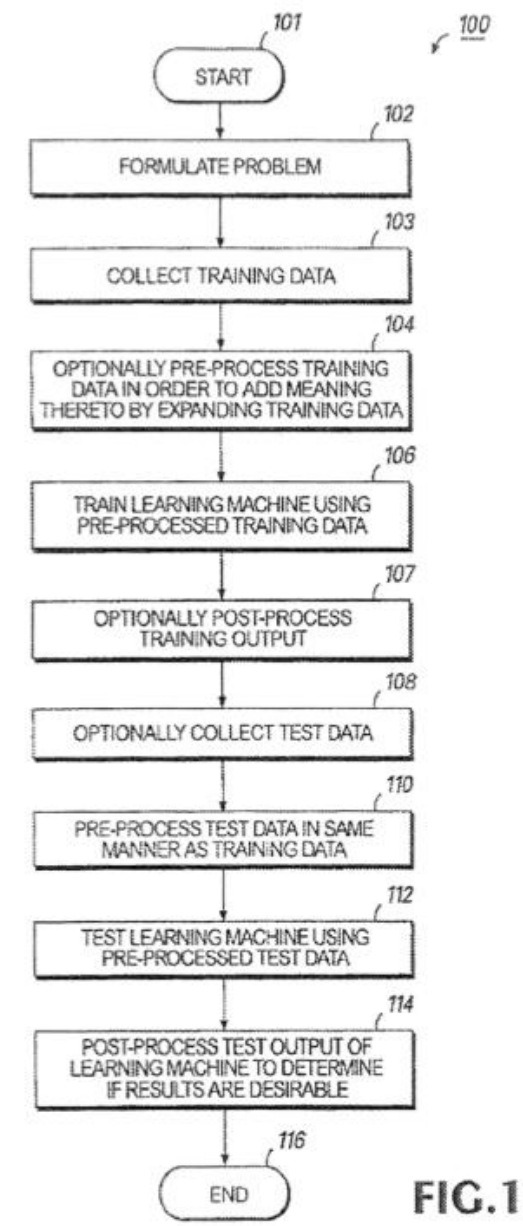


FIG.1

Disclosure / Enablement

Comprehensive Disclosure
Mere reference to an AI network is not sufficient (T0161/18)

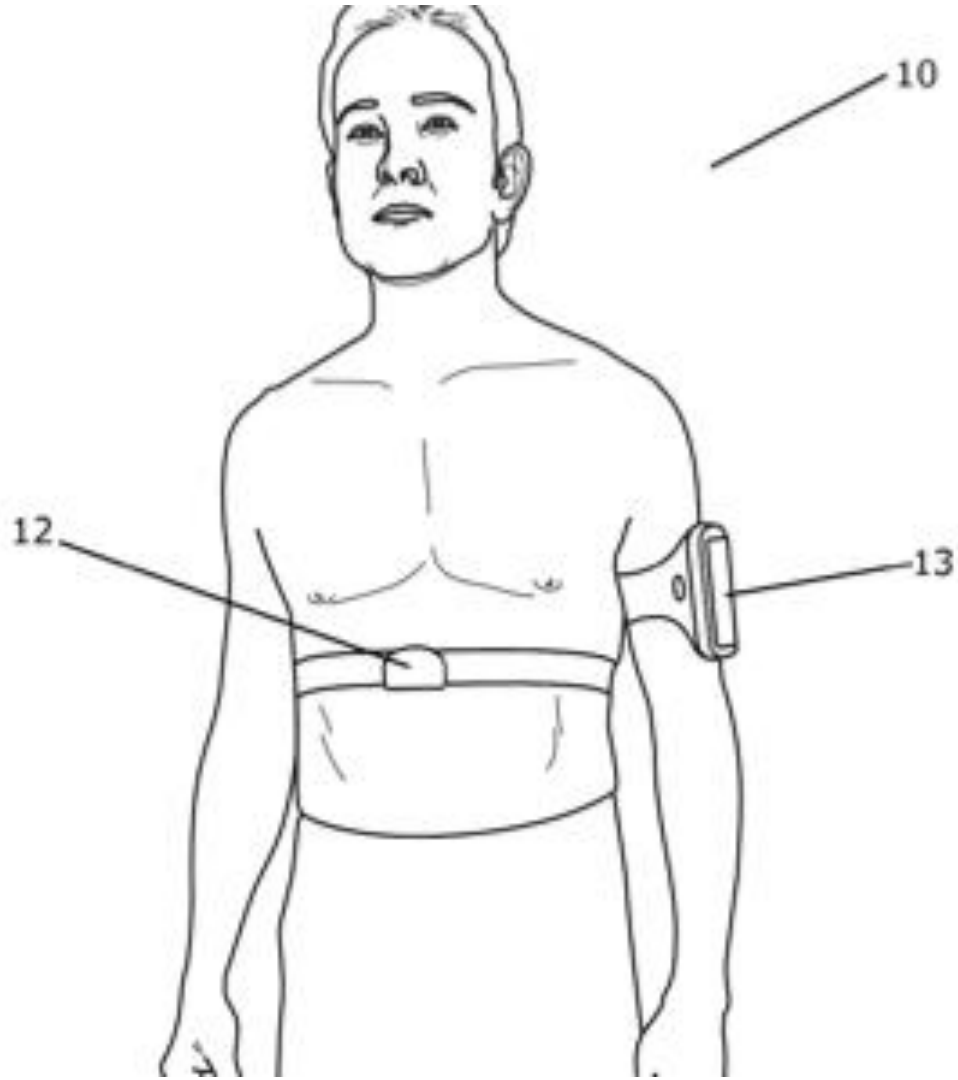
- Disclosure of Training Set of Input Data
- Disclosure of Training Method
- Add structural elements
- Explain functional elements in hardware terms
- Human selection of training parameters

But is the invention really reproducible?

Picture source: Freepik.com

EPO: Lack of Disclosure T1079/17

- EP 2 889 853 A method for optimizing running performance for an individual
- Claims a method for optimizing running performance for an individual, the method comprising..
- No disclosure of “optimal movement pattern”
- “Artificial intelligence” -> not specific enough

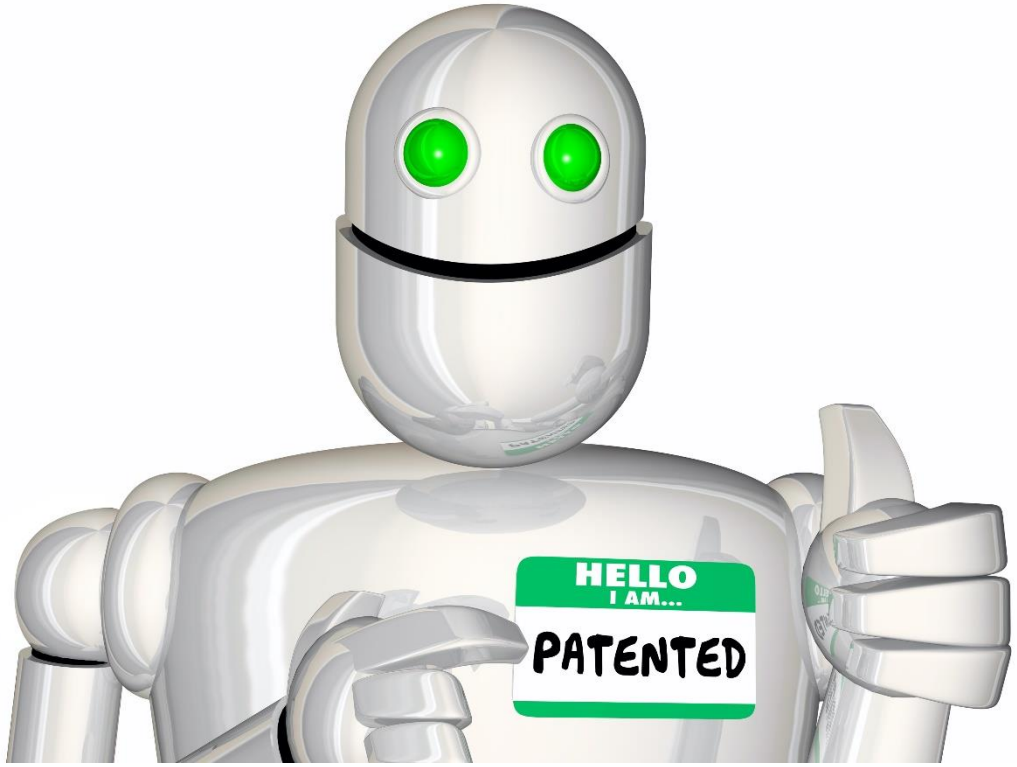


AI as Inventor or Creator

EPO US UK : No
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."



Picture source: Adobe

ChatGPT (Generative AI)

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

Contact

Thanks!

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