



European IP Helpdesk

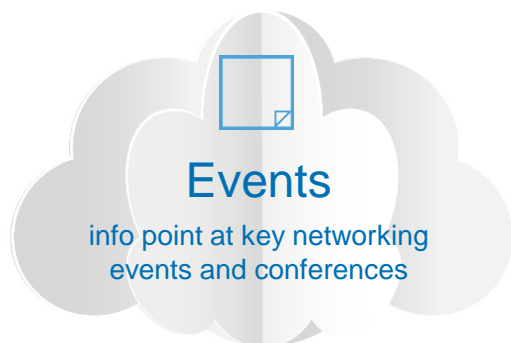
Stay ahead of the innovation game.

IP and AI - Advanced
Services of the European IP Helpdesk
08 April 2021





Services





Communication Formats & Outreach Tools





Helpline



- Free-of-charge, first-line IP support
- Personal and “to the point”
- Answer within 3 working days
- Email, phone and web
- In: English, Spanish, French, German, Italian and Polish
- Confidential





Upcoming events

17
MAR

2021

TRAINING AND WORKSHOPS

**EU - Webinar: Effective IP and Outreach Strategies
Help Increase the Impact of Research and Innovation**


 Live streaming available

18
MAR

2021

TRAINING AND WORKSHOPS

**EU - Webinar: Maximising the Impact of Horizon 2020
Project Results**


 Live streaming available

24
MAR

2021

TRAINING AND WORKSHOPS

EU - Webinar CEIPI coop: IP and Standards

 Live streaming available

26
MAR

2021

TRAINING AND WORKSHOPS

**EU - SPECIAL! Webinar: IP and Health -
Pharmaceutical IP in Times of COVID-19**

 Live streaming available

31
MAR

2021

TRAINING AND WORKSHOPS

EU - Webinar: The Importance of IP for SMEs

 Live streaming available

08
APR

2021

TRAINING AND WORKSHOPS

EU - Webinar: IP and Artificial Intelligence - Advanced

 Live streaming available

14
APR

2021

TRAINING AND WORKSHOPS

EU - Webinar: IPR and Software


 Live streaming available

05
MAY

2021

TRAINING AND WORKSHOPS

EU - Webinar: IP and Artificial Intelligence

 Live streaming available

12
MAY

2021

TRAINING AND WORKSHOPS

EU - Webinar: IP in Biotechnology


 Live streaming available

20
MAY

2021

TRAINING AND WORKSHOPS

EU - Webinar: IP in EU-funded Projects/H2020

 Live streaming available





Ambassador Scheme

- **Cooperation scheme** with the Enterprise Europe Network (EEN): 48 ambassadors – 28 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**





Other regional IP Helpdesks



#IPHeldesk

**NEW
WEBSITE**



ec.europa.eu/ip-helpdesk



Recording

Please note that the whole presentation, including the Q&A session, is recorded. The presentation will be sent to you after the webinar.





Robert Harrison

Patent and Trade Mark Attorney
Munich/Paris/Vienna/Zürich/London



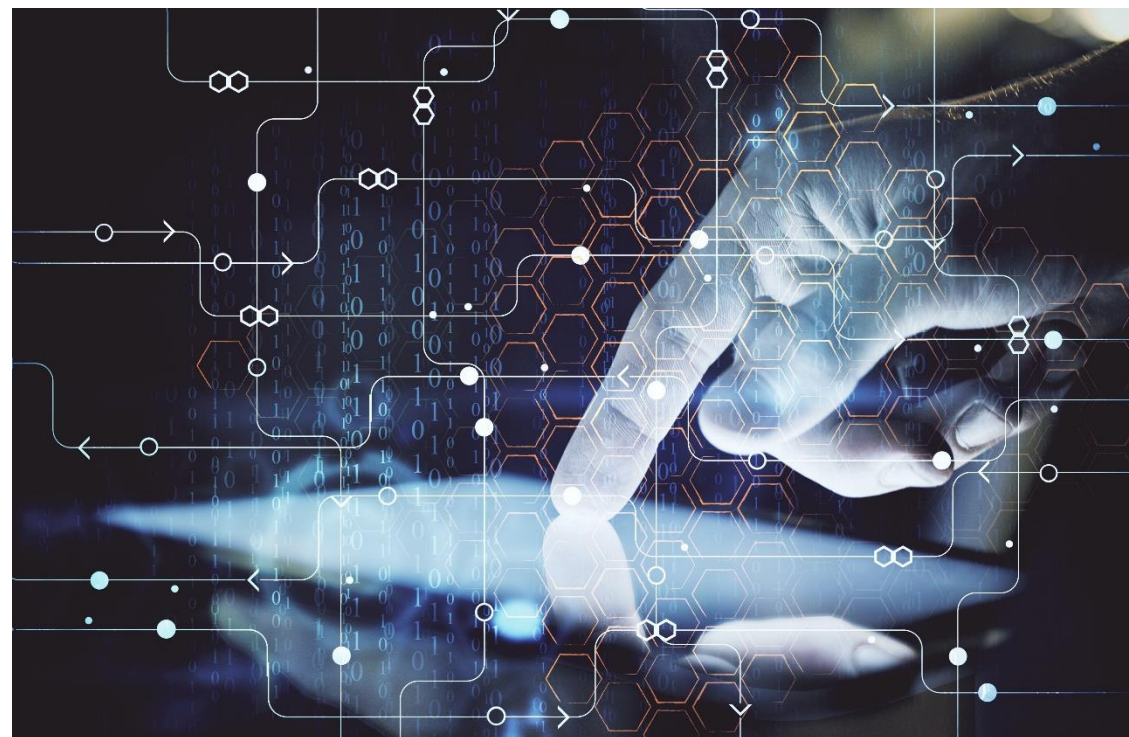
About me

- 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
- Partner, Sonnenberg Harrison mbB
- Advisory Board Member
- IP Strategy



Digital Innovations

- Artificial Intelligence
- Blockchain
- Internet of Things
- Database Technology

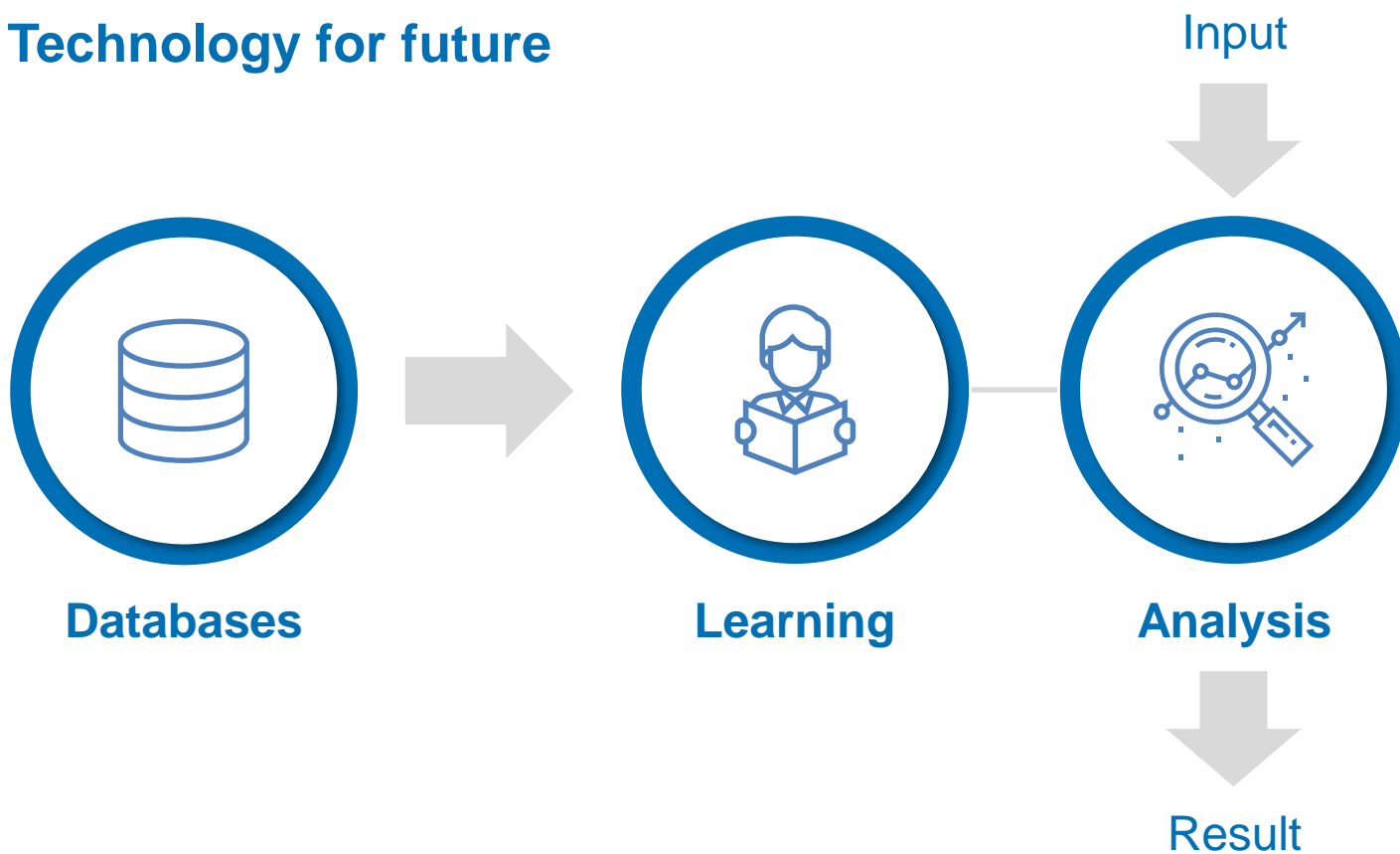




Artificial Intelligence

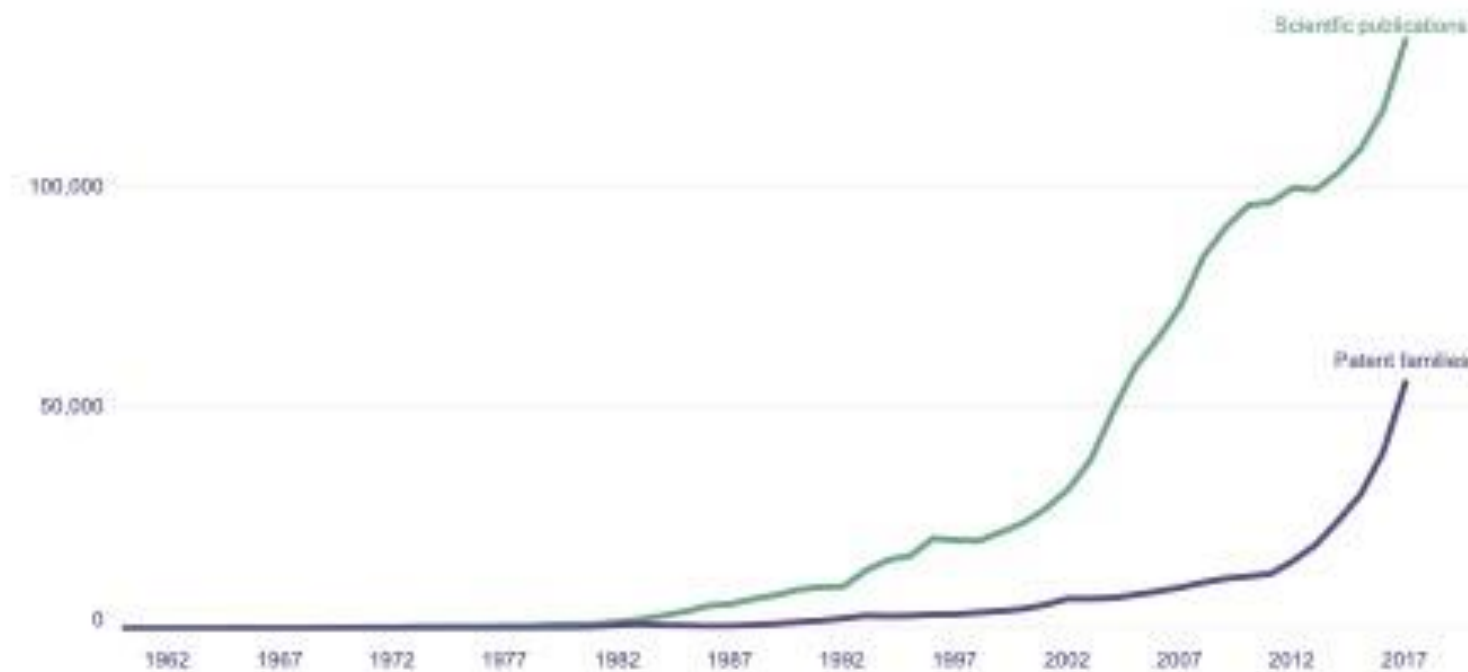
What do we mean?

Technology for future





Increase in Patent Applications





IP and Digital Innovations



Data ownership



Database Rights



Contractual Rights



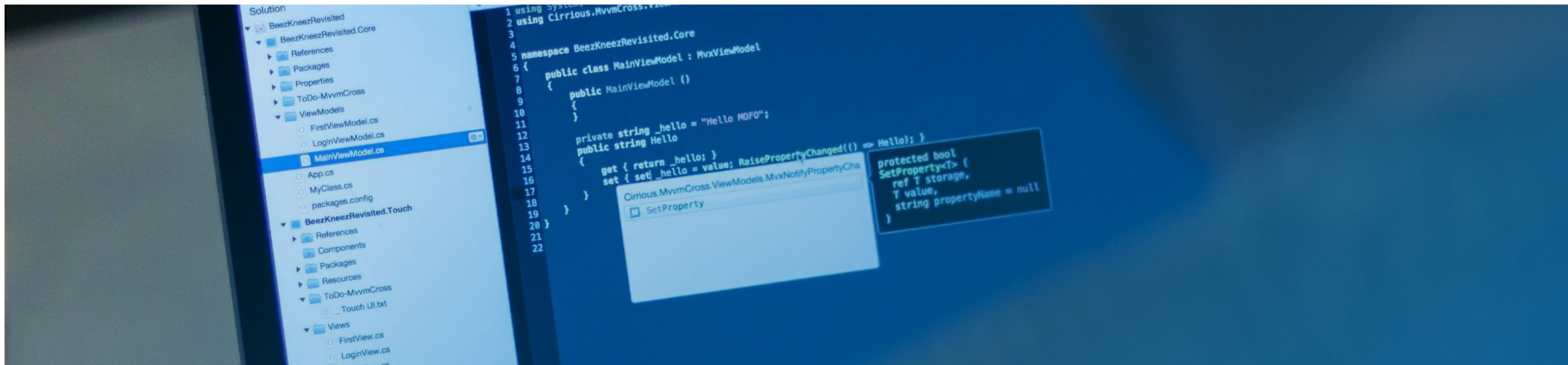
Patents



Data Rights and Ownership



Who owns data?



Can we really talk about “ownership”?

Different countries have different legal concepts

European Commission has given up proposal to regulate data ownership.

Contracts seen as being sufficient.



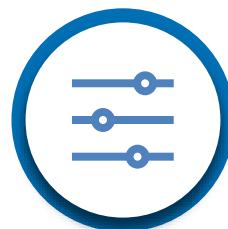
Copyright



Copyright Ownership



Level of Creativity Required for
Copyright Protection



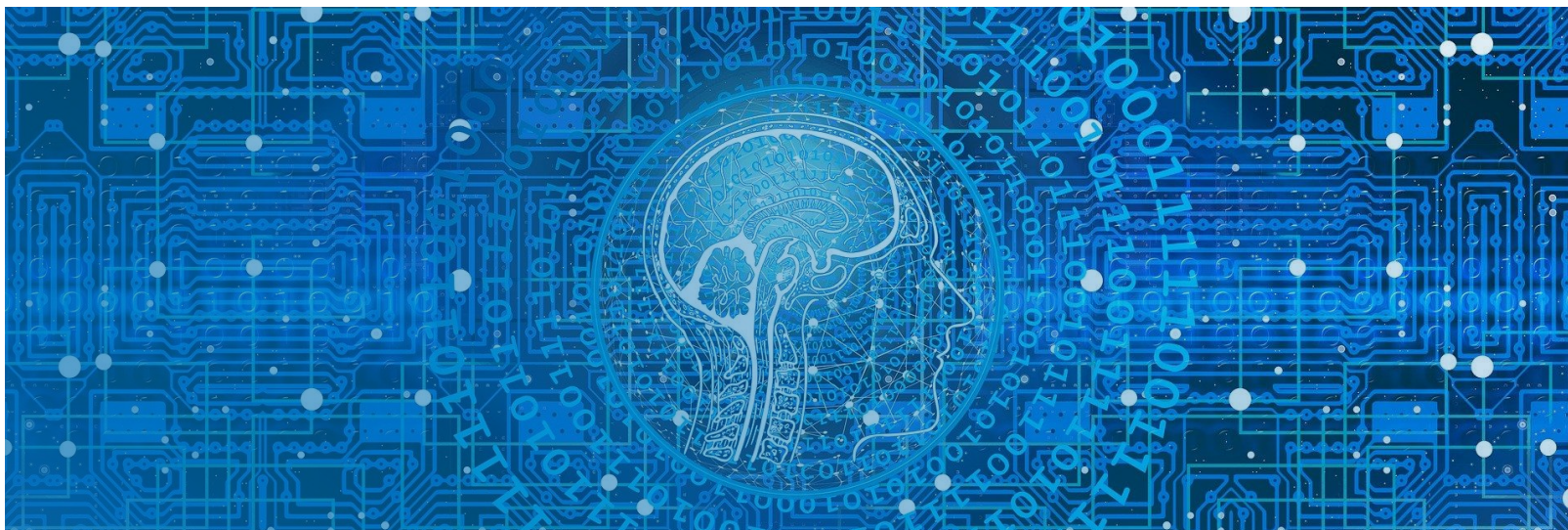
Data per se will not have this level
Generated works?



Software is protected – under
Berne Convention

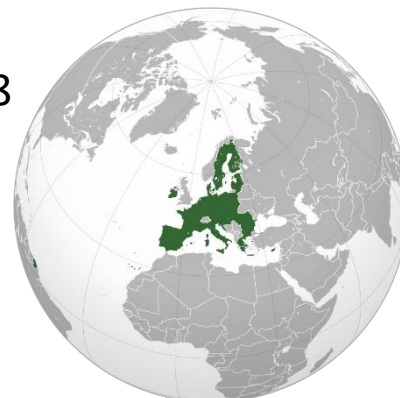


Copyright of Generated Works



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?





Protects collation
of data



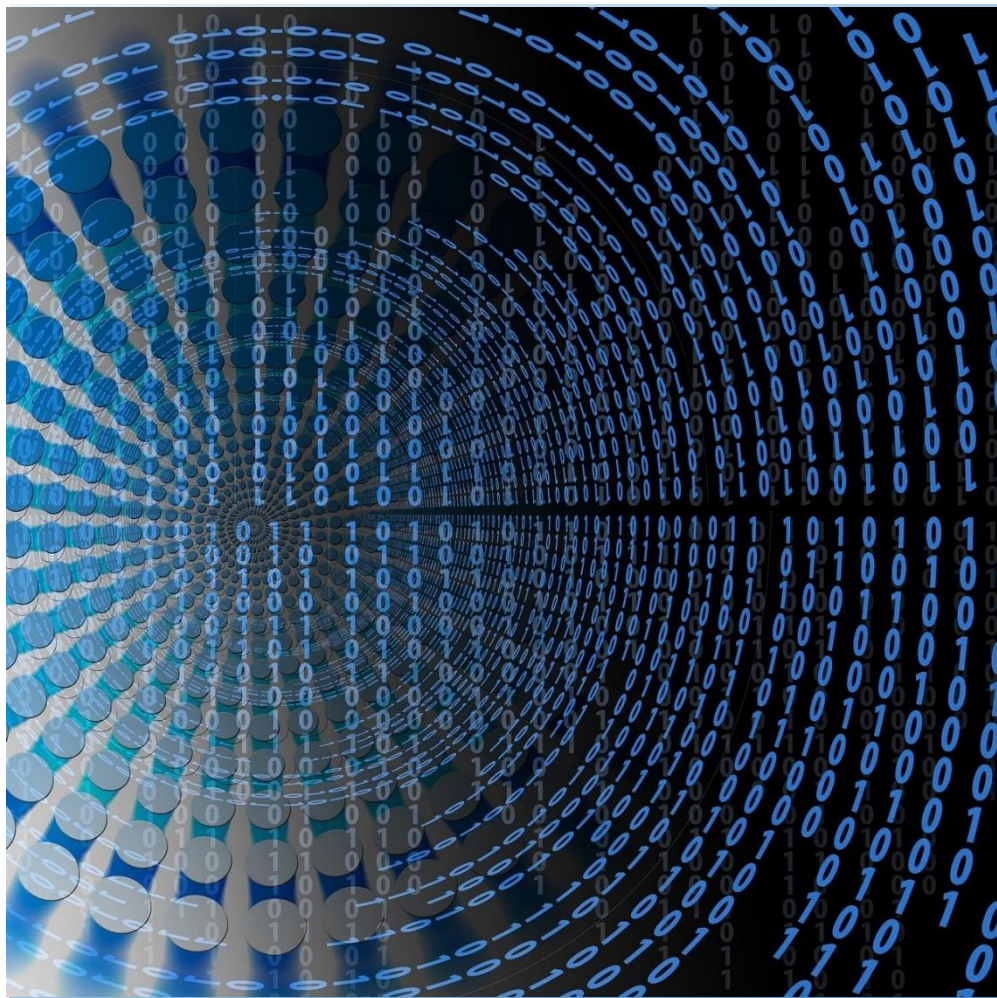
Significant
Investment



Not individual
data items



Database Rights for AI



European Commission has recognized issue



Discussion 2021 about expansion of rights



Databases are valuable assets for Digital Economy



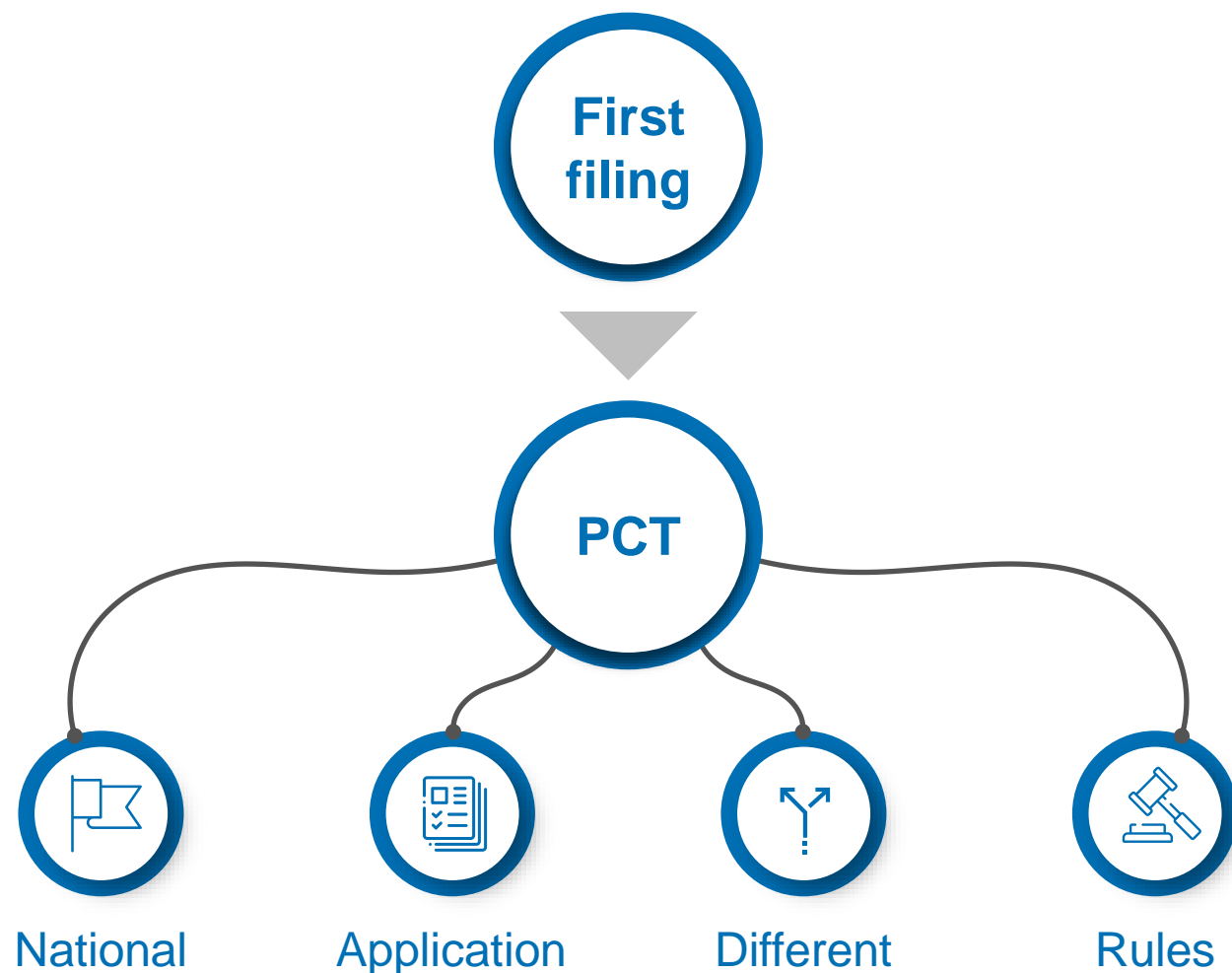
Uncertainty about outcome of consultation



Patentability



Filing a Patent Application





National Rights



Different countries treat AI differently



AI is often seen as software-based



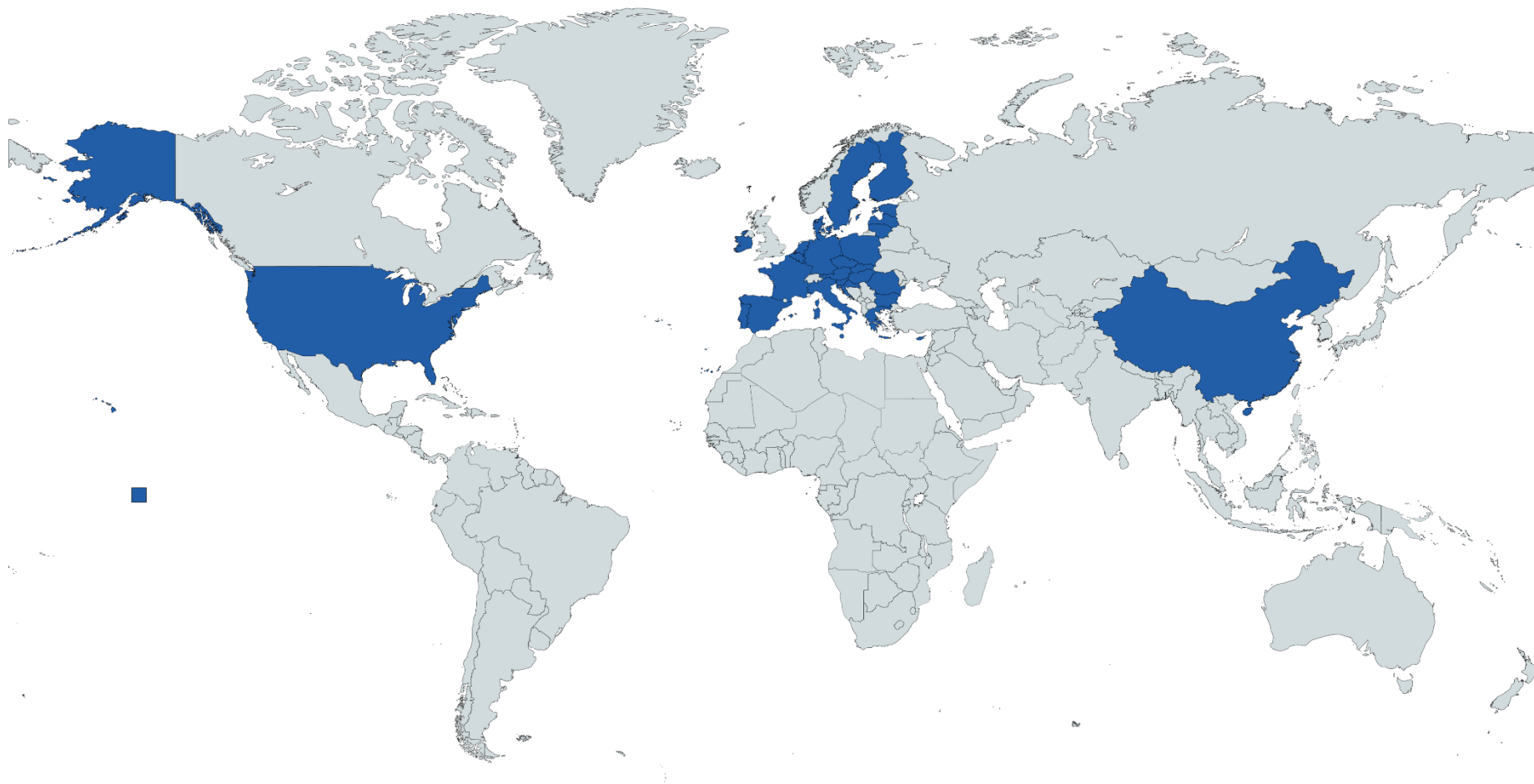
US – rejects “abstract idea”
§101 rejections



EU – “software excluded from patents per se”



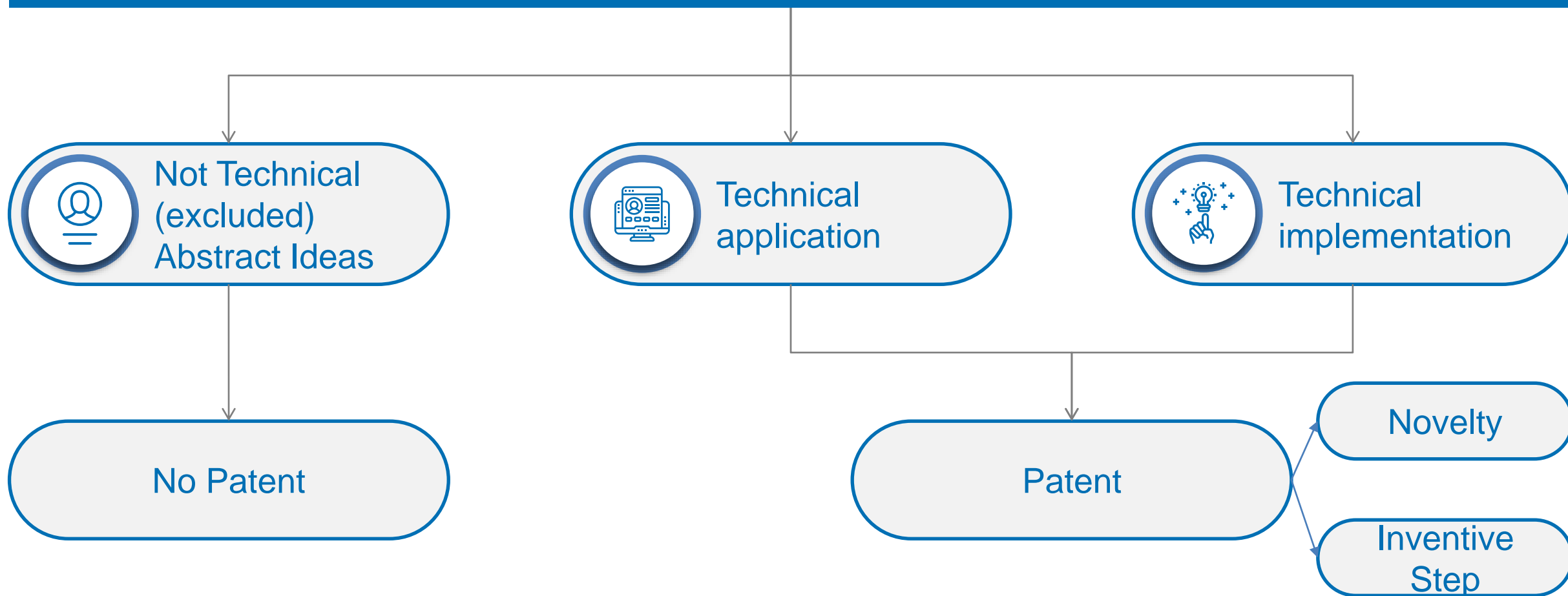
Focus on US, China and Europe





EPO Test for Patentability

Generalised Approach (“Two-Hurdle” Approach)





Overcoming non-technical / abstract objection



Language of claims is
relevant



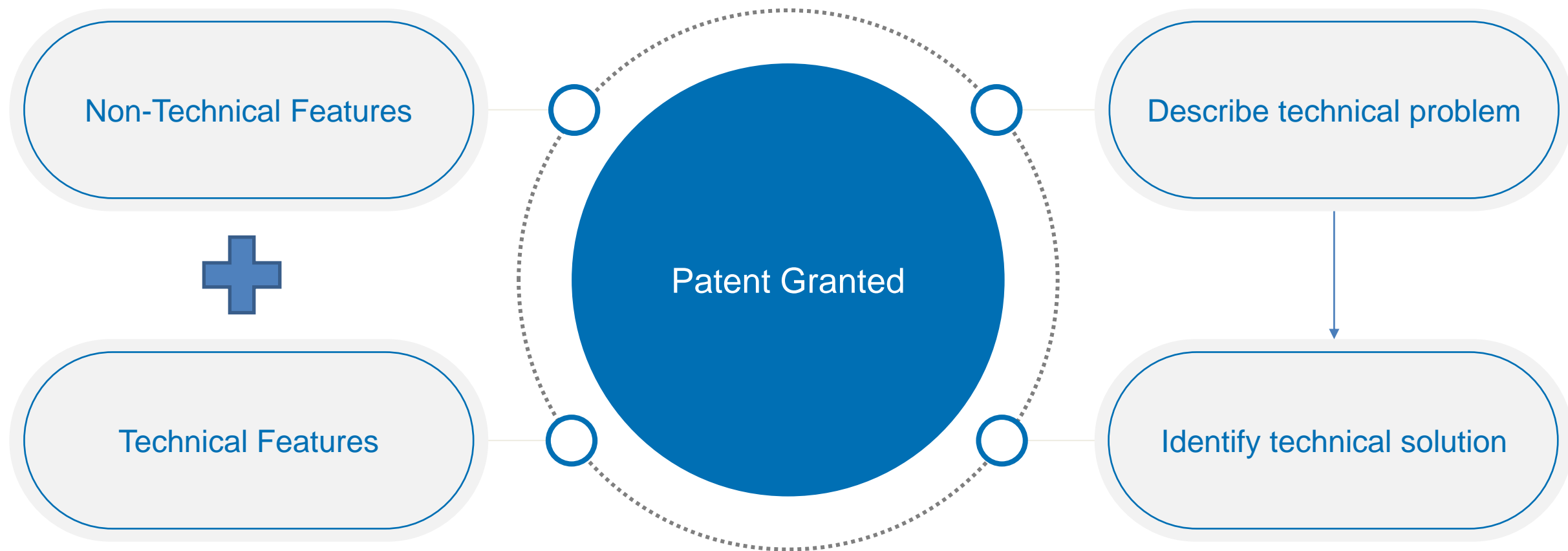
Computer-
Implemented
Method



Emphasising
hardware element

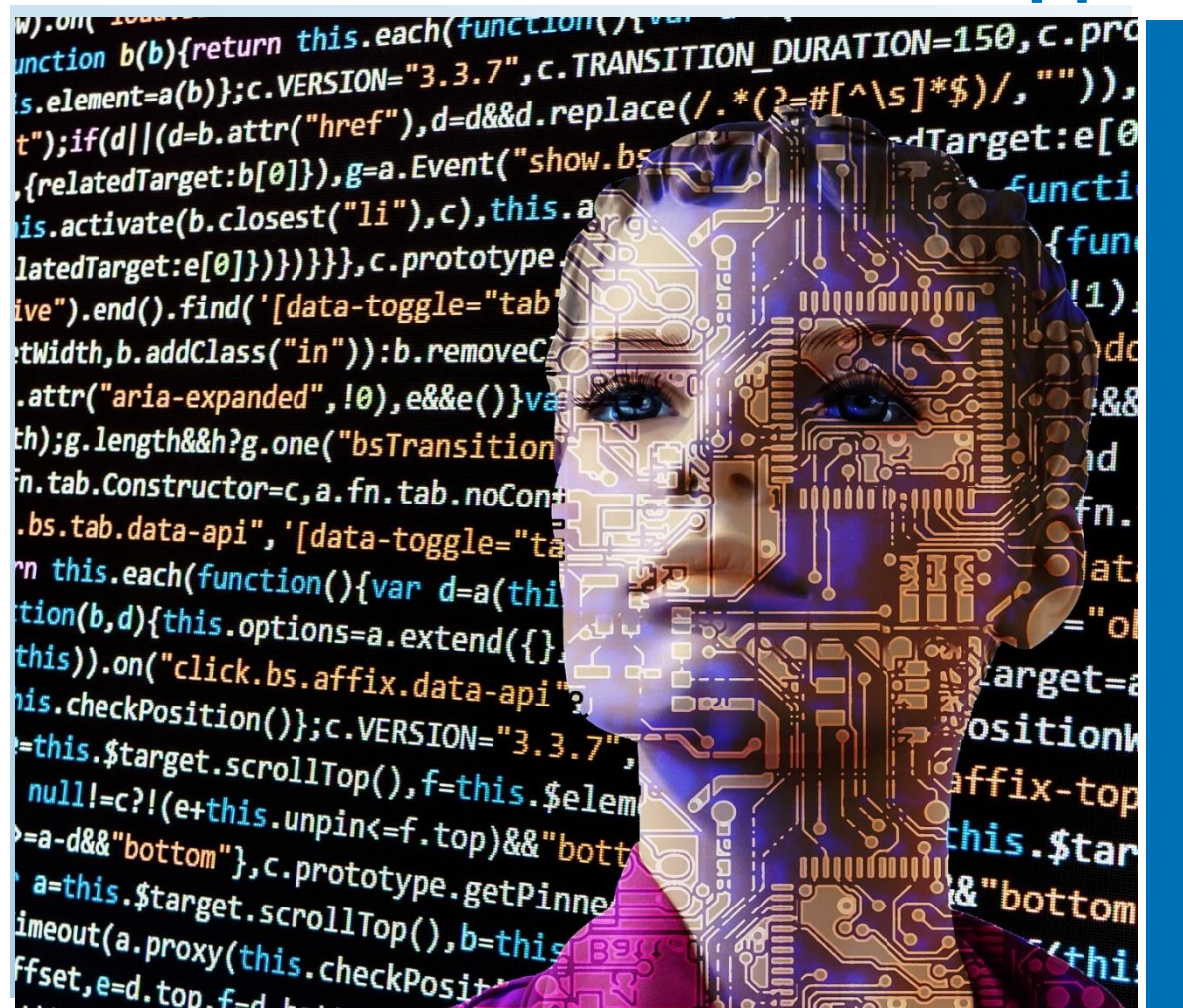


Inventive Step





Modified EPO Approach – G1/19 - Bentley



Exclusions

Feature contribute to
technical character?

Inventive step



Application to Artificial Intelligence

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



Algorithms do not
necessarily contribute to
technical character of
invention



Algorithm must
solve a technical
purpose

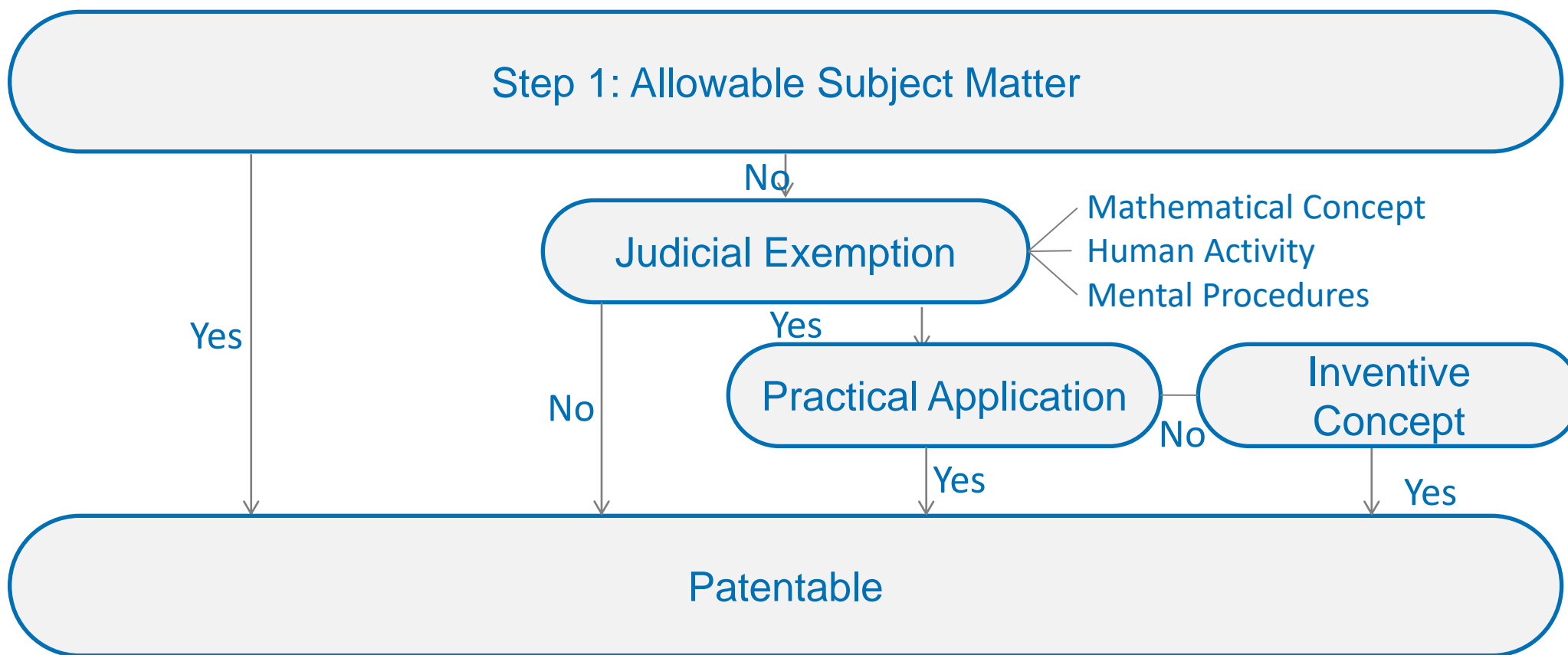


Algorithm
contributes to
technical solution



USPTO Test for Patentability

Alice / Mayo Approach





Application to Artificial Intelligence

How do we apply the principles of *Leland Stanford* to AI?



Algorithms are
mathematical concepts



Different
mathematical
calculation does
not make
patentable



Mere references to
drugs and diagnostic
does not make it
relevant



Chinese Test for Patentability

New Guidelines since 2020

- Previous requirement for technical means abolished
- Step/Mean performed by computer is now sufficient.



Speed Up
Hardware



Reduction of
Data Storage



User
experience



Reduction of
Data Transfer



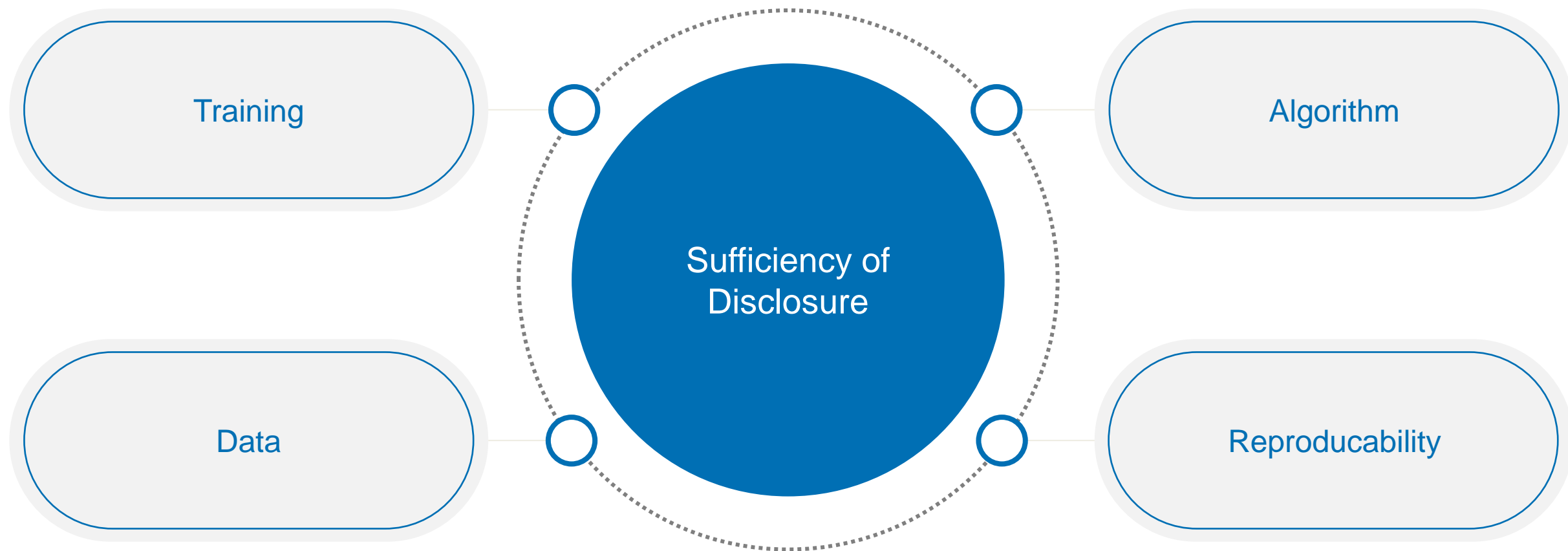
Disclosure of Invention

Art 83 EPC:

“...disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.”

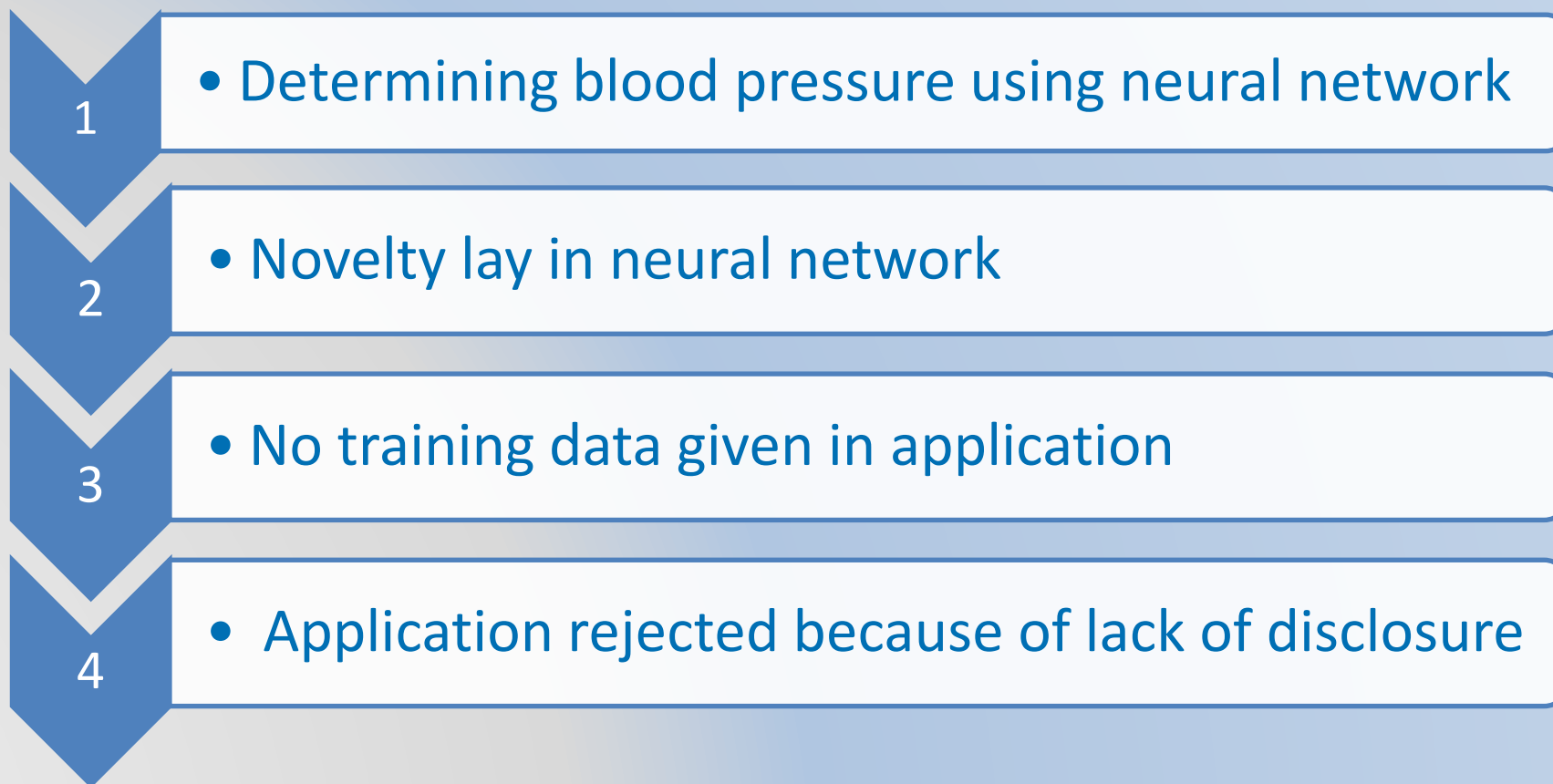


IP5 ROUND TABLE ON ARTIFICIAL INTELLIGENCE OCT 2018





Decision T0161/18 ARC Siebersdorf





Training Data

Gigo: Garbage in; Garbage out

Training method



Variable Names



Algorithm used



Sample Data



Data Sources



Collection methods



**Training
Data**



Claiming the Invention

Art 84 EPC:

“The claims shall define the matter for which protection is sought.”

35 USC 100 (j):

“claimed invention means the subject matter defined by a claim in a patent or an application for a patent.”



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;

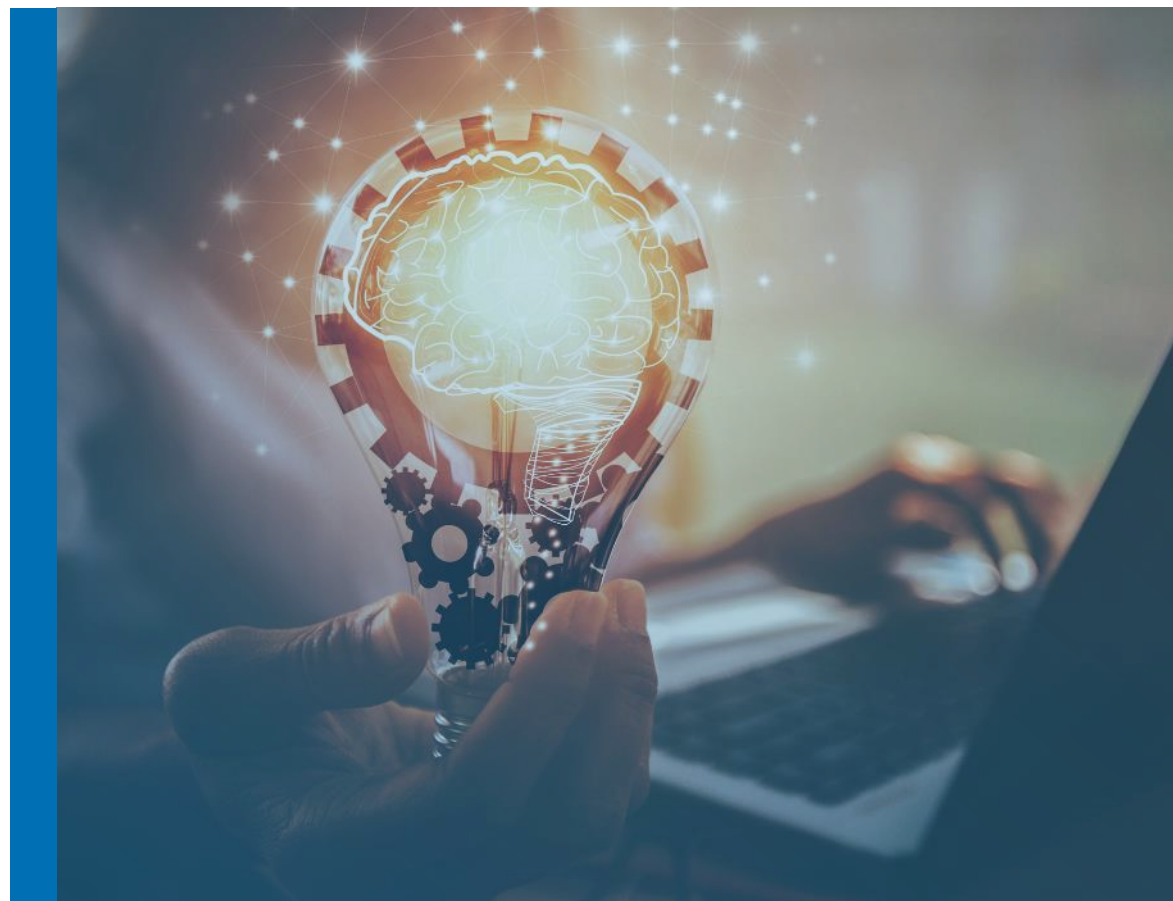


Training the model using the training data (machine learning); and



Using the trained model to analyze new data

Each of these aspects should have separate independent claims





Trained model may be difficult to
define in concrete technical terms



“Product-by-Process” claim

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





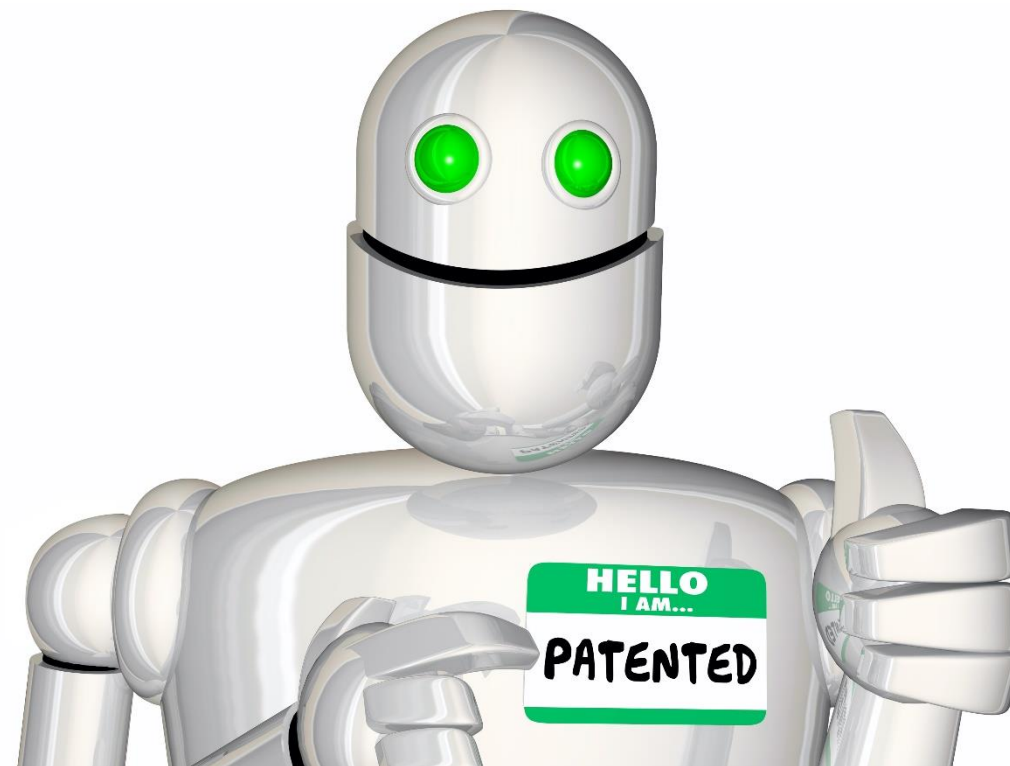
Can an AI program be an
“inventor”



EPO USPTO UK-IPO
IP Australia: NO

But who is then the “inventor”?

“...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.”





Contact

Thanks!

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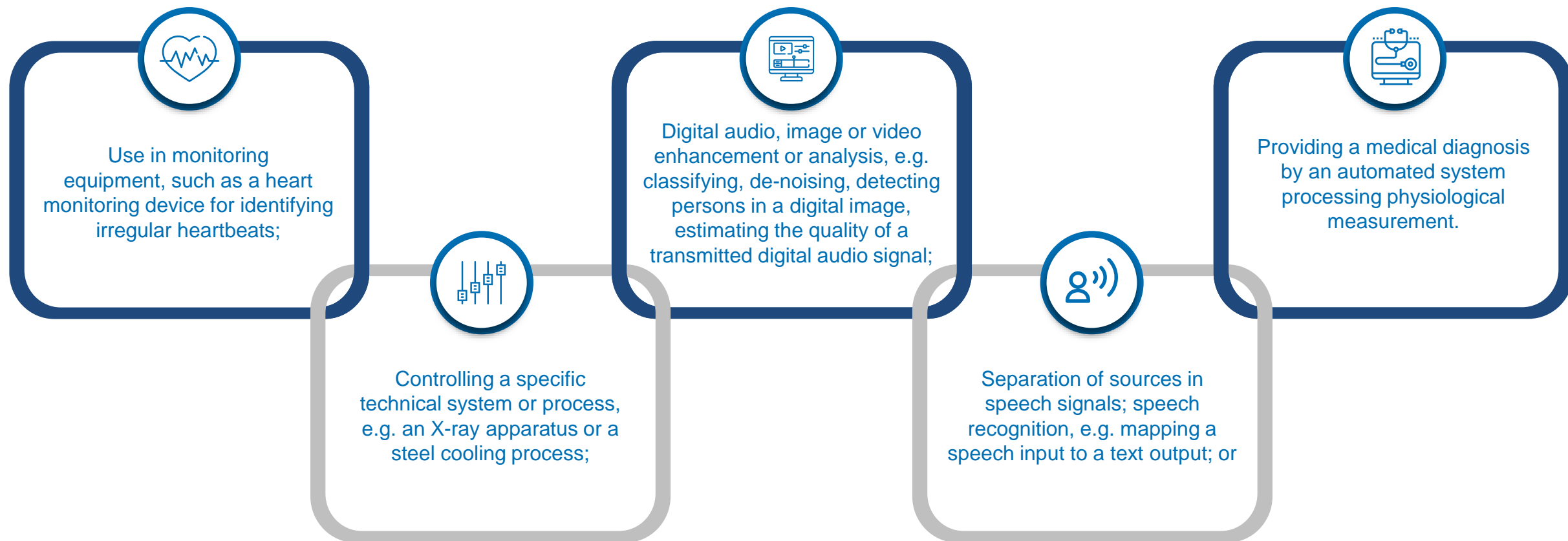
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Technical Application

First Case – Technical Application of a mathematical model



This technical purpose must be specific



Technical Implementation

Second Case - Technical Implementation of a mathematical model



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



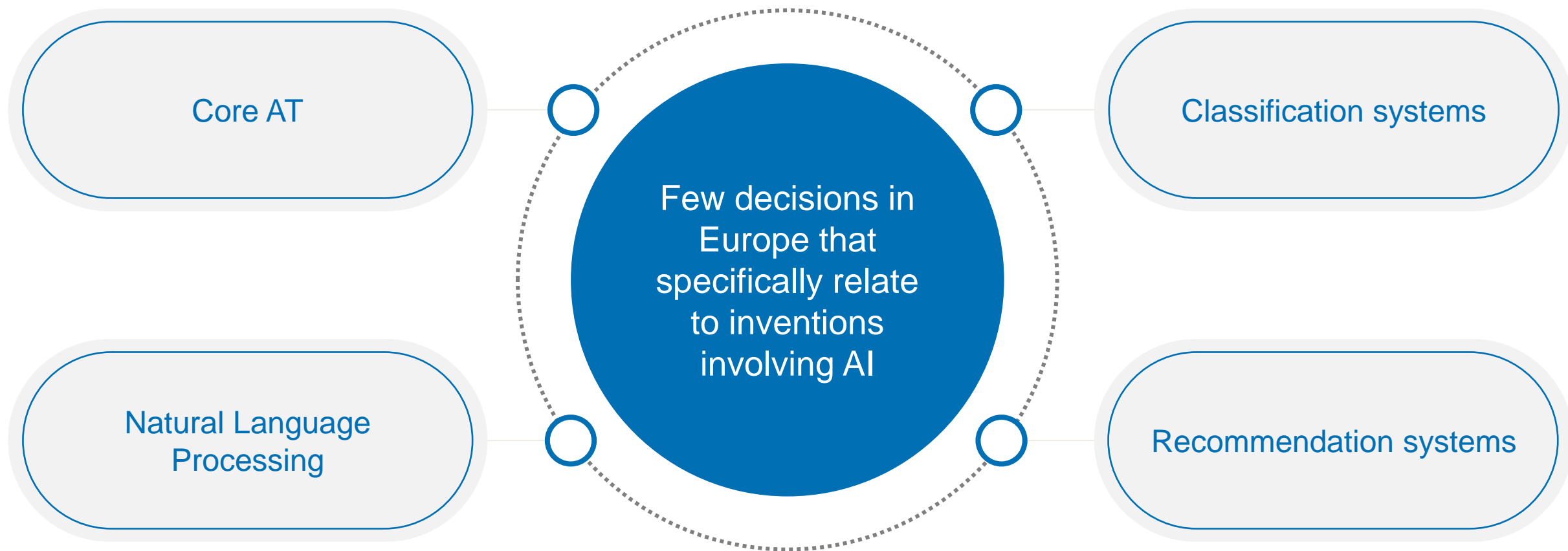
Data
collection



Interaction between
hardware elements
to collect the data



Patentability of Some AI Technologies



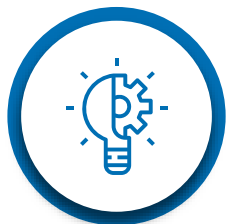


Core AI

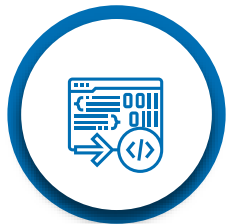
Fundamental building blocks of AI and machine learning, as opposed to the applications of AI

Difficult to file patent applications on innovations in this “Core AI”. EPO considers it not to be “technical”.

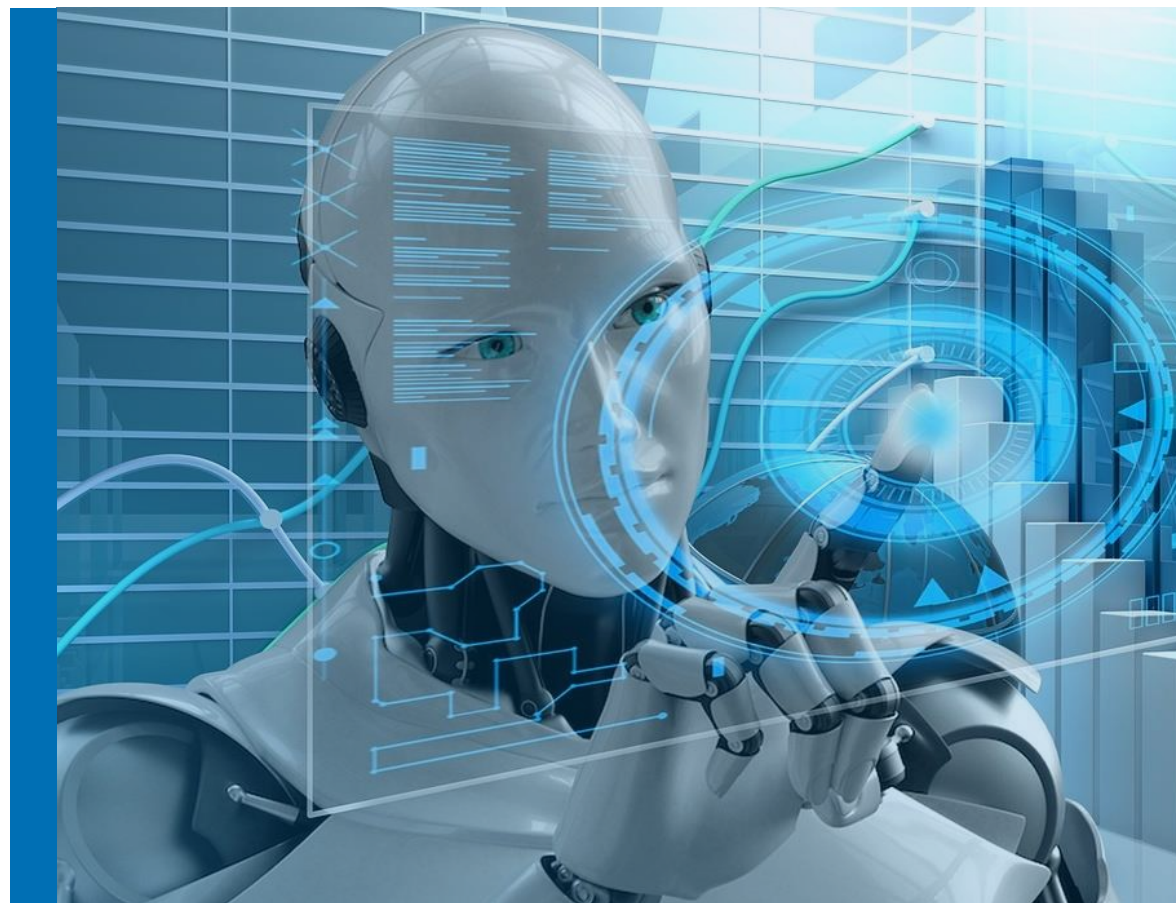
Overcome by specifying in detail



Implementation of the
system



Application of the
algorithm

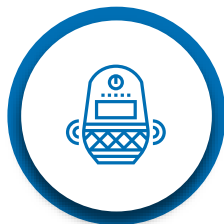




Natural Language Processing

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

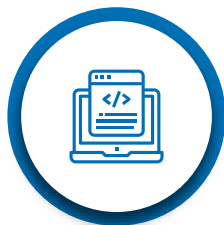
These virtual assistants use a range of NLP techniques, such as



Speech recognition to transcribe
a user's speech into text



Natural language understanding;



Natural language generation to
produce a response.





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



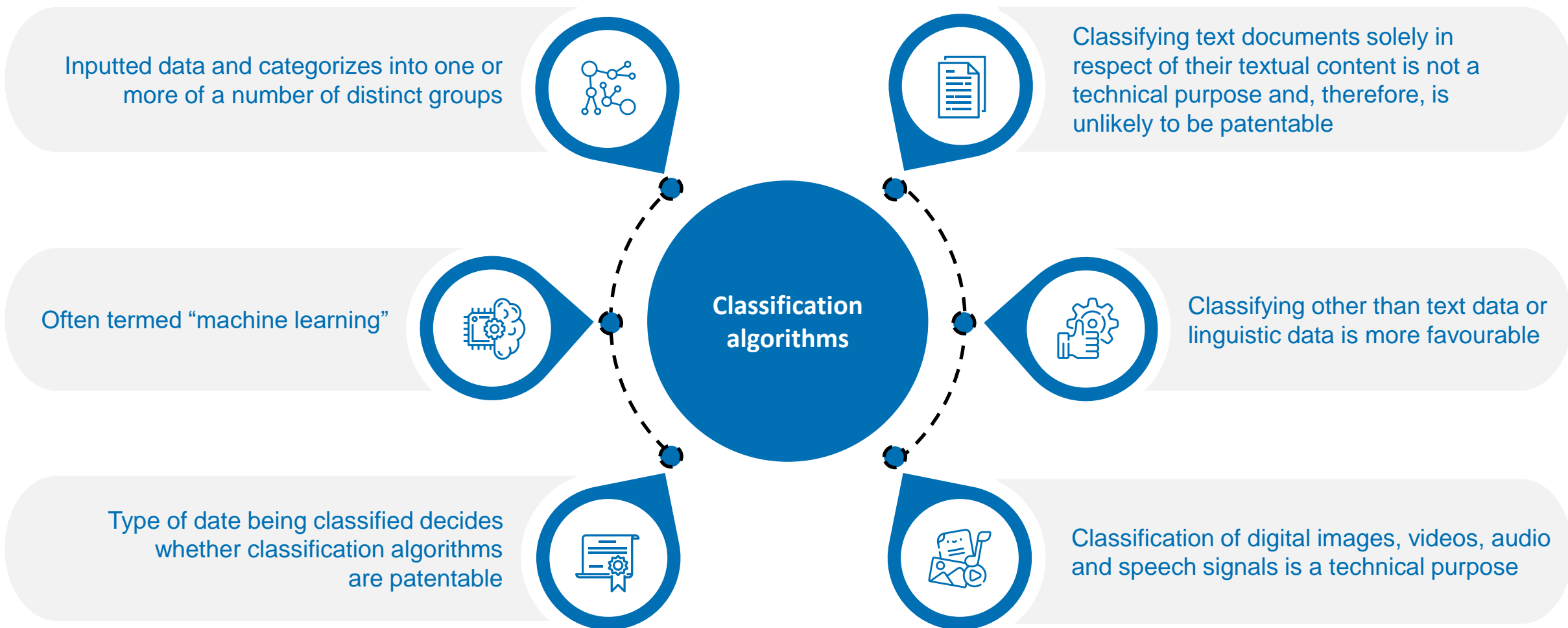
Natural language understanding or comprehension, is considered more difficult to patent

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





Classification Algorithms





Recommendation Systems



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



For example, book selling websites often employ a recommendation system to suggest new books that a reader might enjoy



They are of great commercial significance but extremely difficult to patent as was decided