

# Patentability requirements: Exclusions, exceptions, novelty and inventive step

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# Patentability requirements

"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."

- Technical
- Novelty
- Inventive step
- Industrial application



Article 52(1) EPC



# Exclusions

# Exceptions and exclusions

Governed by:

- Two articles: **Article 52(2) and (3)** and **Article 53 EPC**
- An ever-increasing body of **case law**

# Article 52 - Exclusions

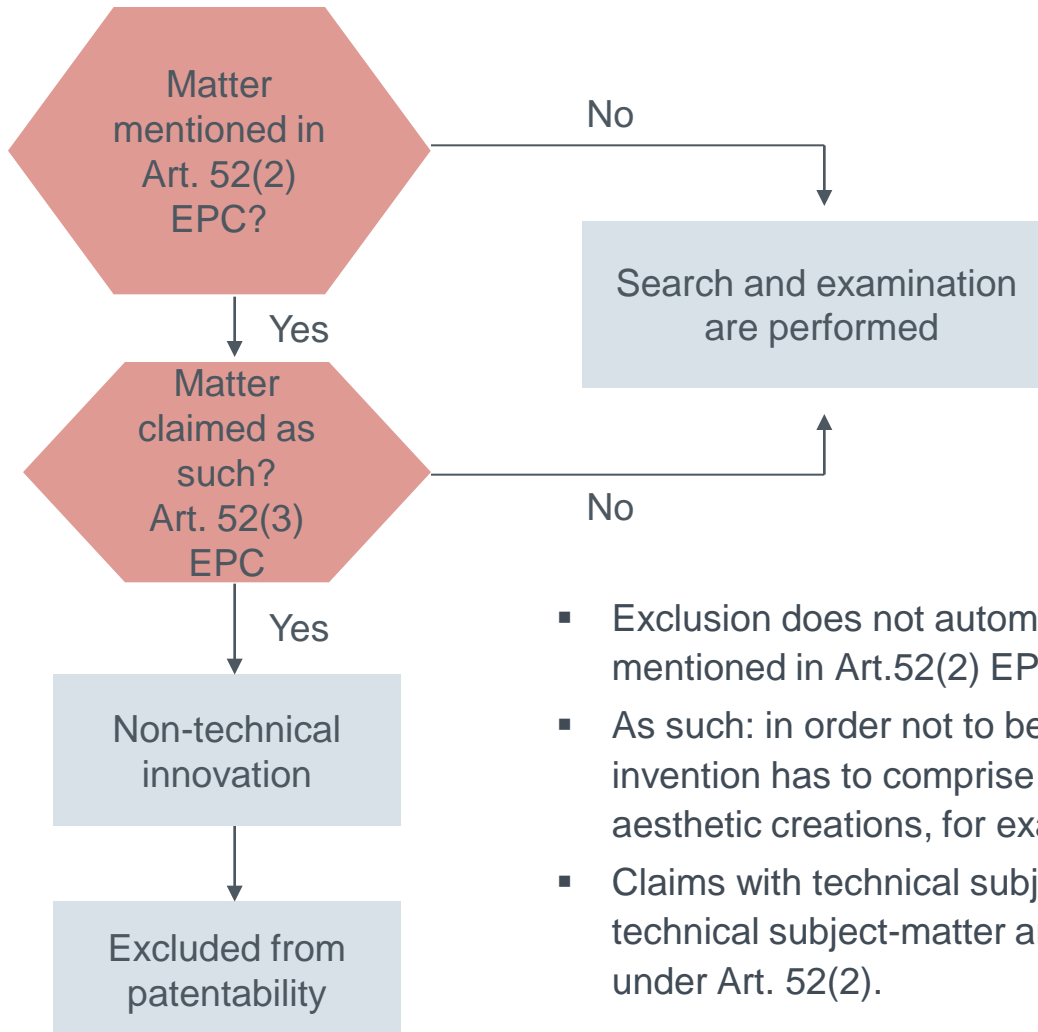
## Non-inventions under Article 52(2) and (3)

Art. 52(2): **The following, in particular, shall not be regarded as inventions:**

- discoveries, scientific theories, mathematical methods
- aesthetic creations
- schemes, rules and methods for performing mental acts playing games or doing business
- programs for computers
- presentations of information

Art. 52(3): **Excluded only to the extent to which a European patent application relates to such subject-matter or activities **as such.****

# Article 52 - Exclusion under Art. 52(2) and (3) EPC



- Exclusion does not automatically apply just because matter mentioned in Art.52(2) EPC is detected.
- As such: in order not to be excluded from patentability, the invention has to comprise a technical character (in contrast to aesthetic creations, for example).
- Claims with technical subject-matter and abstract or non-technical subject-matter are not excluded from patentability under Art. 52(2).

## Article 53 - Exceptions

European patents shall **not** be granted in respect of:

- a) Inventions the commercial exploitation of which would be contrary to “**ordre public**” or **morality**; such exploitation shall not be deemed to be so contrary merely because it is prohibited by law or regulation in some or all of the Contracting States;
- b) **Plant or animal varieties** or **essentially biological processes for the production of plants or animals**; this provision shall not apply to microbiological processes or the products thereof;
- c) Methods for treatment of the human or animal body by **surgery or therapy and diagnostic methods** practiced on the human or animal body; this provision shall not apply to products, in particular substances or compositions, for use in any of these methods.



# Novelty



# Patentability requirements

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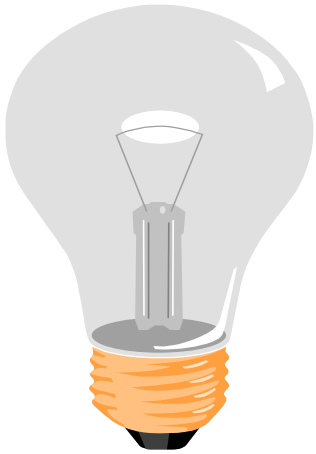
- Technical
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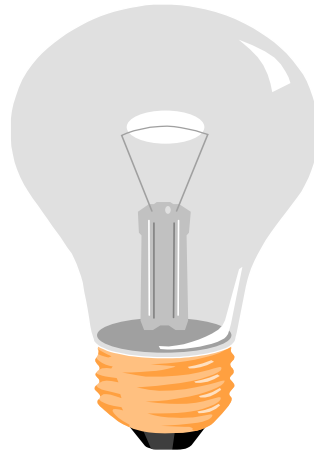
[Article 52\(1\) EPC](#)

# Novelty

Why do we examine for novelty?



An electric light bulb  
as has been used  
for decades



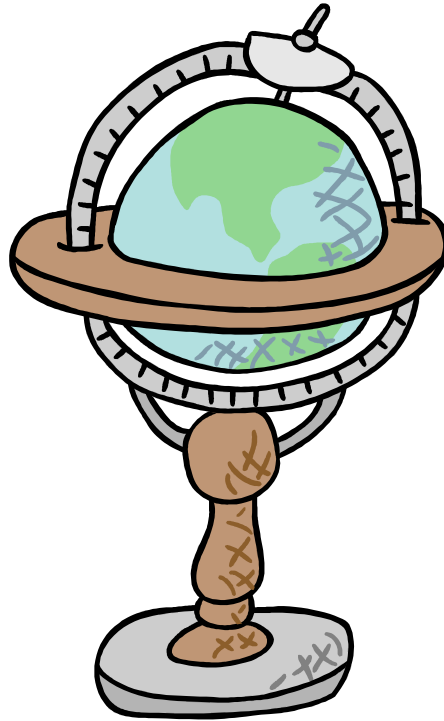
A patent application  
filed yesterday

**Is it logical to grant a patent for something which is already known?**

# What does "new" mean?



Already known



Patent application



Already known

# Novelty

"An invention shall be considered to be **new** if it does not form part of the **state of the art.**"



[Article 54\(1\) EPC](#)

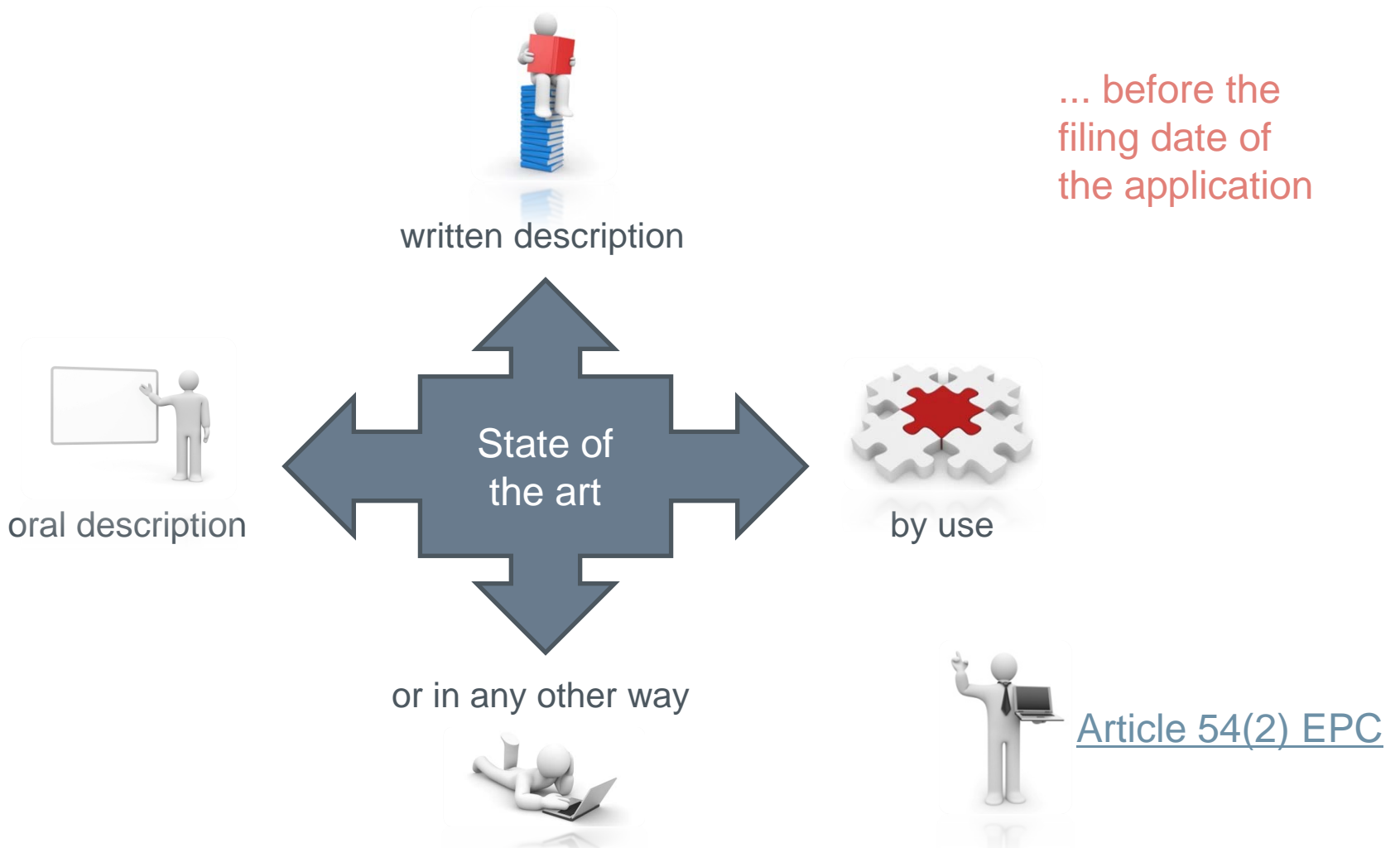
# Article 54(2)

- What is "the state of the art"?

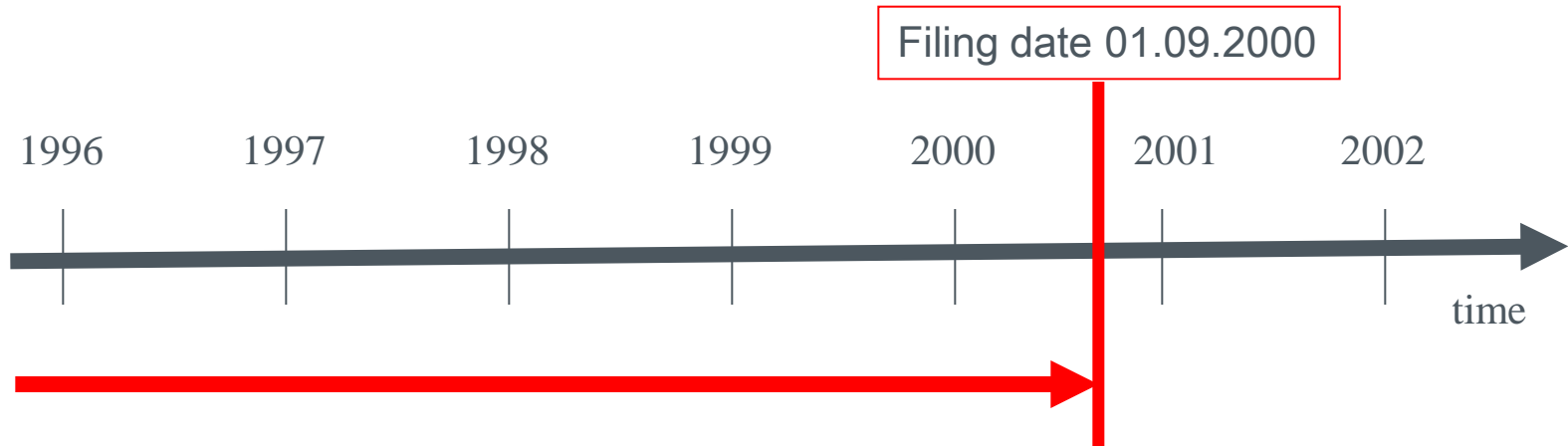
# What is the "state of the art"?

Everything made available to the public by means of ...

... before the filing date of the application



# Which disclosures can we use?

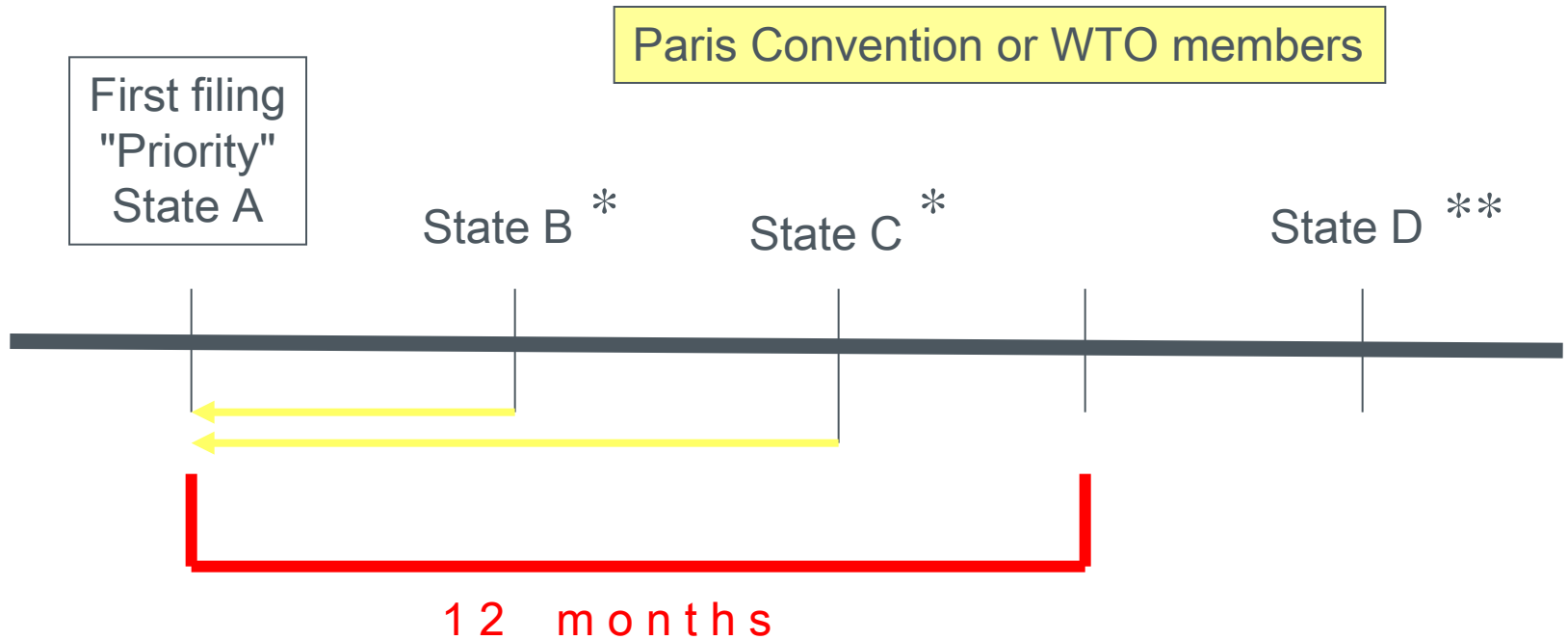


Everything made available  
to the public **before the  
date of filing**

Article 54 EPC



# Priority

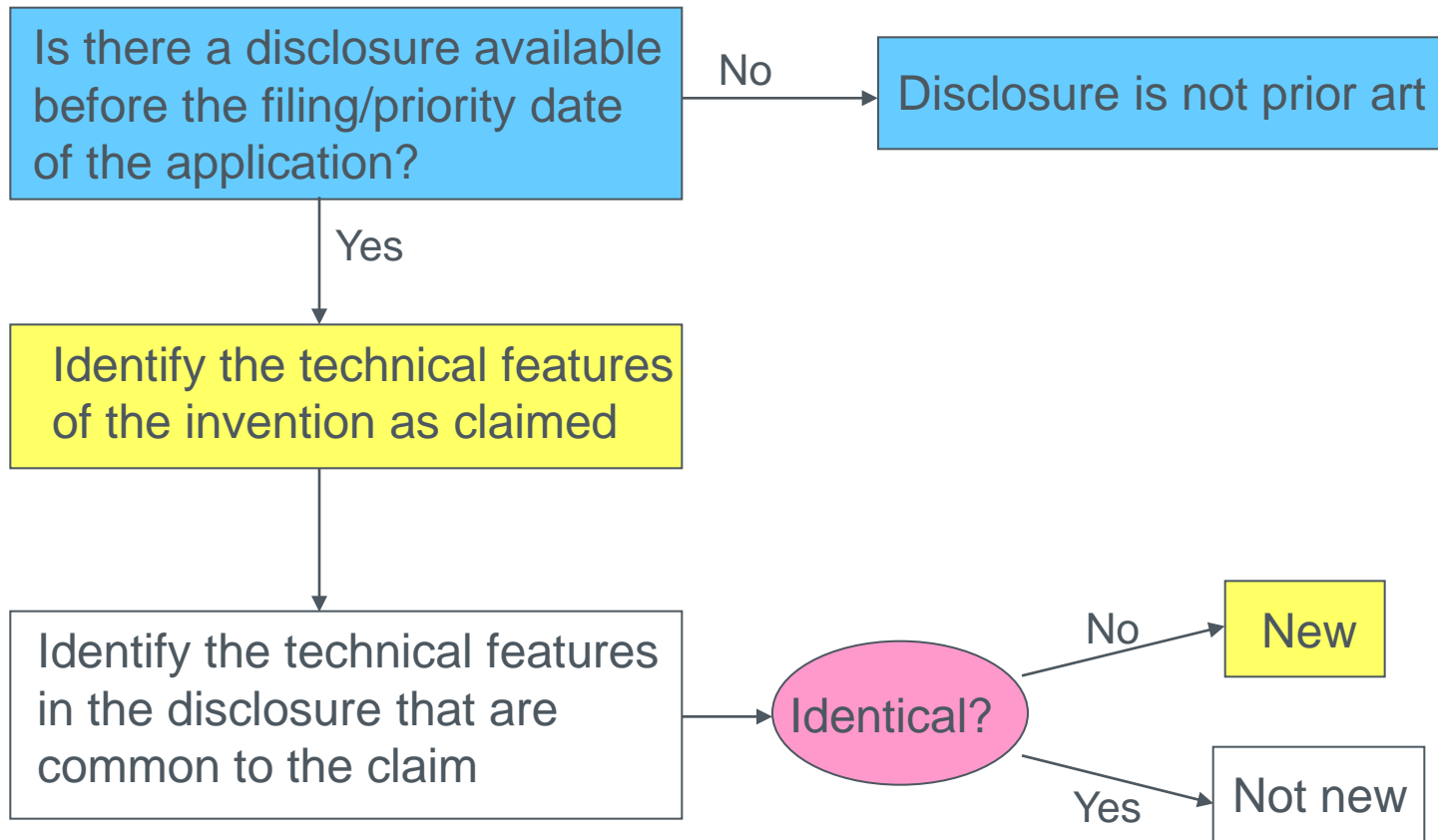


\* Entitled to use the priority date as the first filing date

\*\* **NOT** entitled to use the priority date as the first filing date

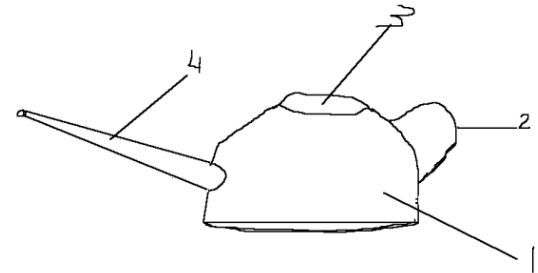


# Is the invention new?



# Novelty test

A device for watering plants having a water-containing portion (1), a handle (2), an opening with a lid (3) and a spout (4)\*.



\*A projecting pipe or tube, e.g. as in a teapot.

B



F



E



E

A



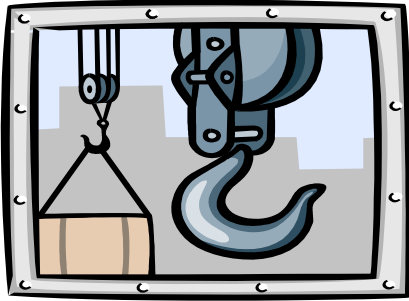
C



D



# Implicit features/interpretation of "... for ..."

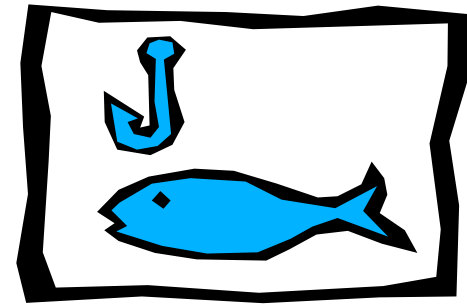


## Claim:

"A half-circle-shaped hook for a crane, made of stainless steel, the edge of the hook pointing upwards when the hook is hung up"

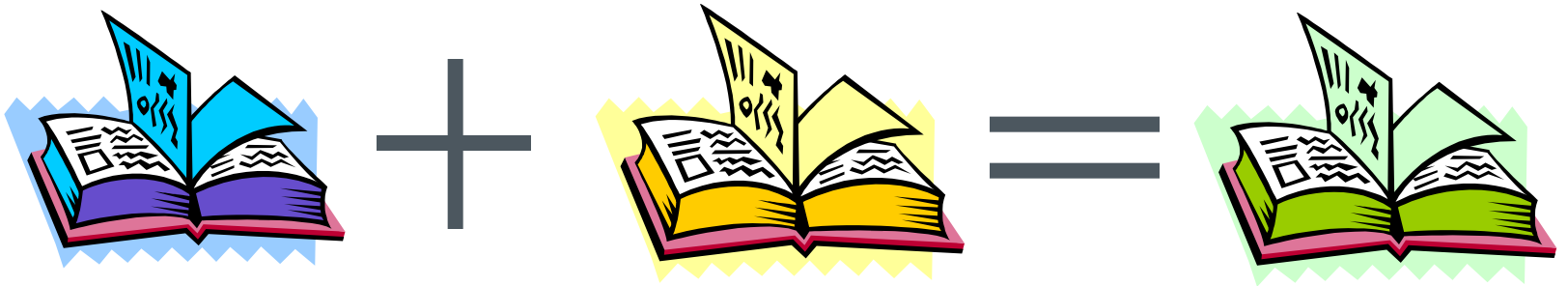
## Prior art:

"A stainless steel hook for fishing, in the shape of a half-circle, pointing upwards when hung up"



# Combination of documents

Can we use a combination of documents to attack novelty?



# Novelty: Equivalents (1)

Claim

A watering can of **aluminium**

Prior art

A watering can of **zinc**



## Novelty: Equivalents (2)

A watering can made of **zinc** (prior art)

is **NOT IDENTICAL** to

a watering can made of **aluminium** (claim)

→ THE SUBJECT-MATTER OF THE CLAIM IS **NEW**

# Generic disclosures vs. specific examples

Claim

A watering can made of metal

Prior art

A watering can made of aluminium



## Generic disclosures vs. specific examples (2)

Claim

A watering can made of metal

Prior art

A watering can made of aluminium

Does the prior art disclose "a watering can made of metal"?

Yes!

Why? Because aluminium is a metal.

→ THE SUBJECT-MATTER OF THE CLAIM IS **NOT NEW**





# Inventive step

# Patentability requirements

"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."

- Technical
- Novelty
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[Article 52\(1\) EPC](#)

# Inventive step

"An invention shall be considered as involving an inventive step if, having regard to the **state of the art**, it is **not obvious** to a person **skilled in the art**."

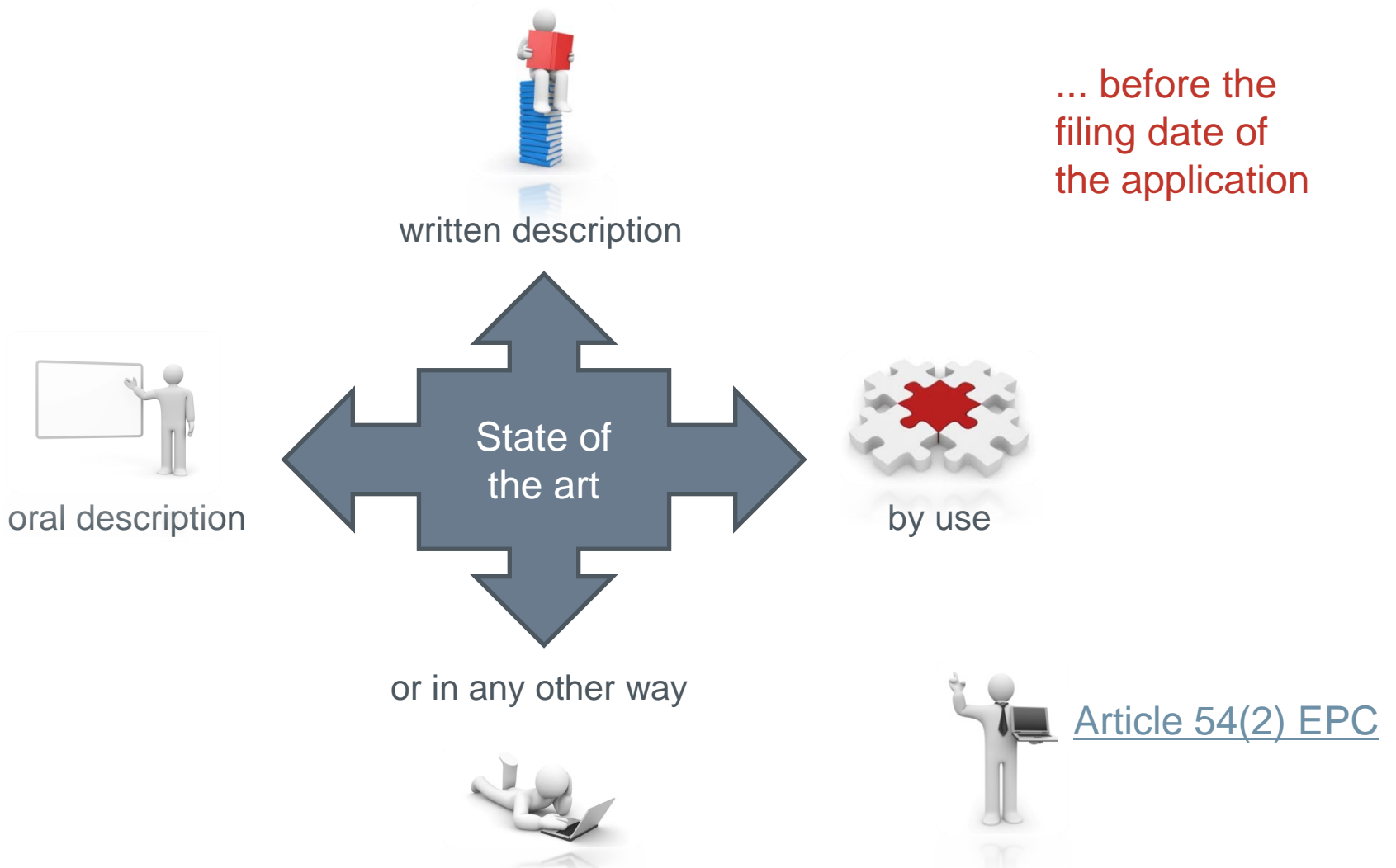


[Article 56 EPC](#)

# What is the "state of the art"?

Everything made available to the public by means of ...

... before the  
filing date of  
the application



# The person skilled in the art

- is a skilled practitioner in the relevant field
- is possessed of average knowledge and ability
- is aware of what is common general knowledge in a particular technical field at the **relevant date**
- has access to everything in the state of the art
- has a normal capacity for routine work, but no inventive skills
- is involved in constant development in his field
- is expected to look for suggestions in neighbouring and general technical fields or even remote technical fields
- may in some fields be a team rather than an individual person

If the problem prompts the skilled person to seek its solution in another technical field, the specialist in that other field is the person qualified to solve the problem.

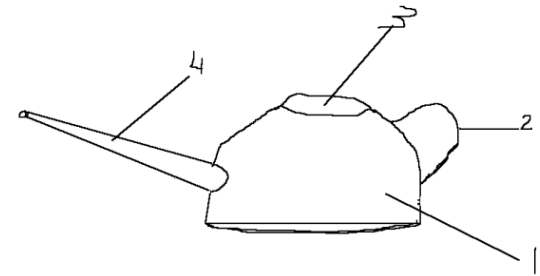


# How do we decide on **obviousness**?

- Various tests in different national systems
- One of the tests used by the German Patent Office is that every invention is a solution to a problem.
- In the very first case heard by the EPO boards of appeal, the problem/solution approach was used to decide on the question of inventive step.

## Example - nearest prior art?

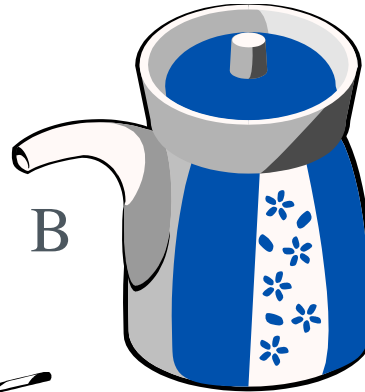
- A device for watering plants having a water containing portion (1), a handle (2), an opening with a lid (3) and a spout (4)\*.
- \* *A spout is a projecting pipe or tube, e.g. in a tea-pot.*



A



B



C



D



## Example - nearest prior art?

- A device for watering plants having a water containing portion (1), a handle (2), an opening with a lid (3) and a spout (4)\*.
- \* *A spout is a projecting pipe or tube, e.g. in a tea-pot.*

A



A has the most features in common and is aimed at the same problem i.e. watering plants

Difference is the lid



## Example - nearest prior art?

- A device for watering plants having a water containing portion (1), a handle (2), an opening with a lid (3) and a spout (4)\*.
- \* *A spout is a projecting pipe or tube, e.g. in a tea-pot.*

A



Difference is the lid  
what technical effect does this achieve?  
Water does not spill.

What is the objective technical problem?  
How to modify the prior art "A" such that spillage is prevented.

## Example - nearest prior art?

- A device for watering plants having a water containing portion (1), a handle (2), an opening with a lid (3) and a spout (4)\*.
- \* *A spout is a projecting pipe or tube, e.g. in a tea-pot.*

A



Difference is the lid

Is the different feature present in the prior art?

B



C



D



## Example - nearest prior art?

- A device for watering plants having a water containing portion (1), a handle (2), an opening with a lid (3) and a spout (4)\*.
- \* *A spout is a projecting pipe or tube, e.g. in a tea-pot.*

A



B



Difference is the lid

Is the different feature present in the prior art?

B shows a lid in a similar device

Does it solve the objective technical problem?

Yes - so it **could** be used

**Would** the skilled man use it?

What teaching do we have?

*"The thermos has a lid to prevent loss of heat from the liquid"*

Thank you for your attention!

# Article 52 EPC

- **Discoveries - 2(a)**
  - A hitherto unknown planet
  - The discovery that a particular known material is able to withstand mechanical shock would not be patentable, but a railway sleeper made from that material could well be.
- **Scientific theories - 2(a)**
  - The theory of relativity
  - Physical theory of semiconductivity not allowable. However, new semiconductor devices and processes for manufacturing these may be patentable.
- **Mathematical methods - 2(a)**
  - Purely abstract or intellectual methods
  - A shortcut method of division would not be patentable, but a calculating machine constructed to operate accordingly may well be patentable.
  - A mathematical method for designing electrical filters is not patentable, but filters designed according to this method would not be excluded from patentability.

# Article 52 EPC

- **Aesthetic creations - 2(b)**
  - Works of art, the appreciation of which is purely subjective.
  - No exclusion if characterised by technical features, even if the effect produced by the technical features is at least partly of an aesthetic nature.
  - A fabric may be provided with an attractive appearance by means of a layered structure not previously used for this purpose, in which case a fabric incorporating such structure might be patentable.
  - A diamond may have a particularly beautiful shape (not of itself patentable) produced by a new technical process.
- **Schemes, rules and methods for performing mental acts or playing games - 2(c)**
  - Schemes for learning a language, methods of solving crossword puzzles and games (as an abstract entity defined by its rules) are not patentable.
  - If computers, computer networks, etc. are present, the invention is to be examined as a "computer-implemented invention".
  - Not excluded: electronic devices applying rules, or, for example, the chessboard and pieces intended for use based on those rules.

# Article 52 EPC

- **Methods for doing business - 2(c)**
  - Schemes for organising a commercial operation
  - Not excluded if technical character (technical means present or if there is a technical problem with a technical solution). If carried out by a computer to be examined as CII.
  - A method of operating a computer-based management system for providing integrated financial, inventory and manufacturing management comprising:  
Step 1, Step 2, ... Step N.

# Article 52 EPC

## ▪ Programs for computers - 2(c)

- Form of “computer-implemented invention”, CII having one or more of the features of the claimed invention realised by means of a program or programs.
- Not excluded from patentability under Article 52(2),(3) EPC if it has a technical character.
- A program for controlling an x-ray apparatus having instructions adapted to carry out the following steps: Step 1, Step 2, Step n.
- A program for checking the spelling of a word having the following instructions: Instruction 1, Instruction 2, Instruction 3.



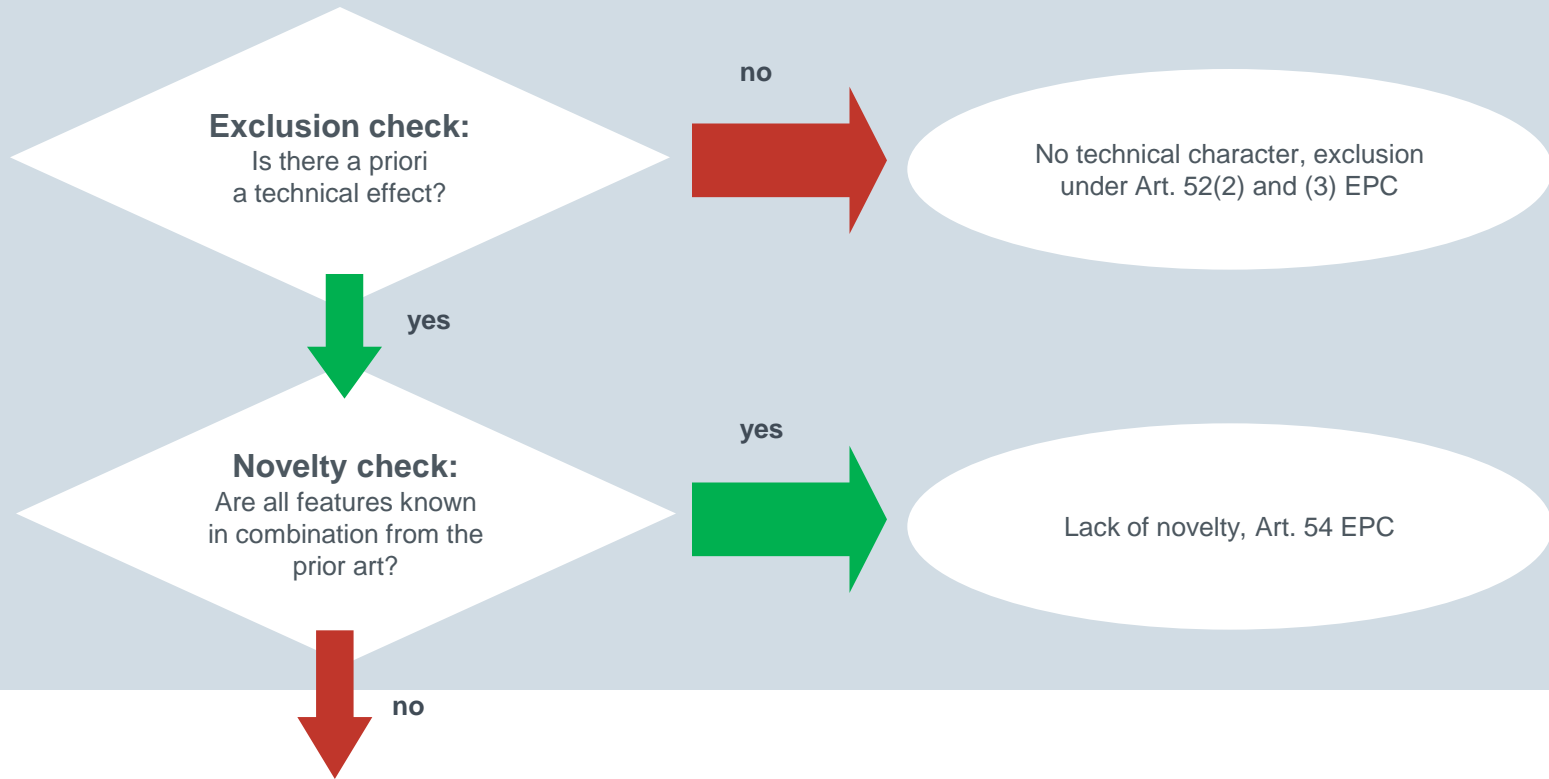
# Article 52 EPC

- **Presentation of information - 2(d)**
  - The presentation of information defined solely by the content of the information is not patentable (e.g. acoustic signals, spoken words, visual displays, books defined by their subject, gramophone records defined by the musical piece recorded, traffic signs defined by the warning thereon).
  - If, however, the presentation of information has new technical features, there could be patentable subject-matter in the information carrier or in the process or apparatus for presenting the information (a record with special grooves, a special method for synchronising sound and image recording).

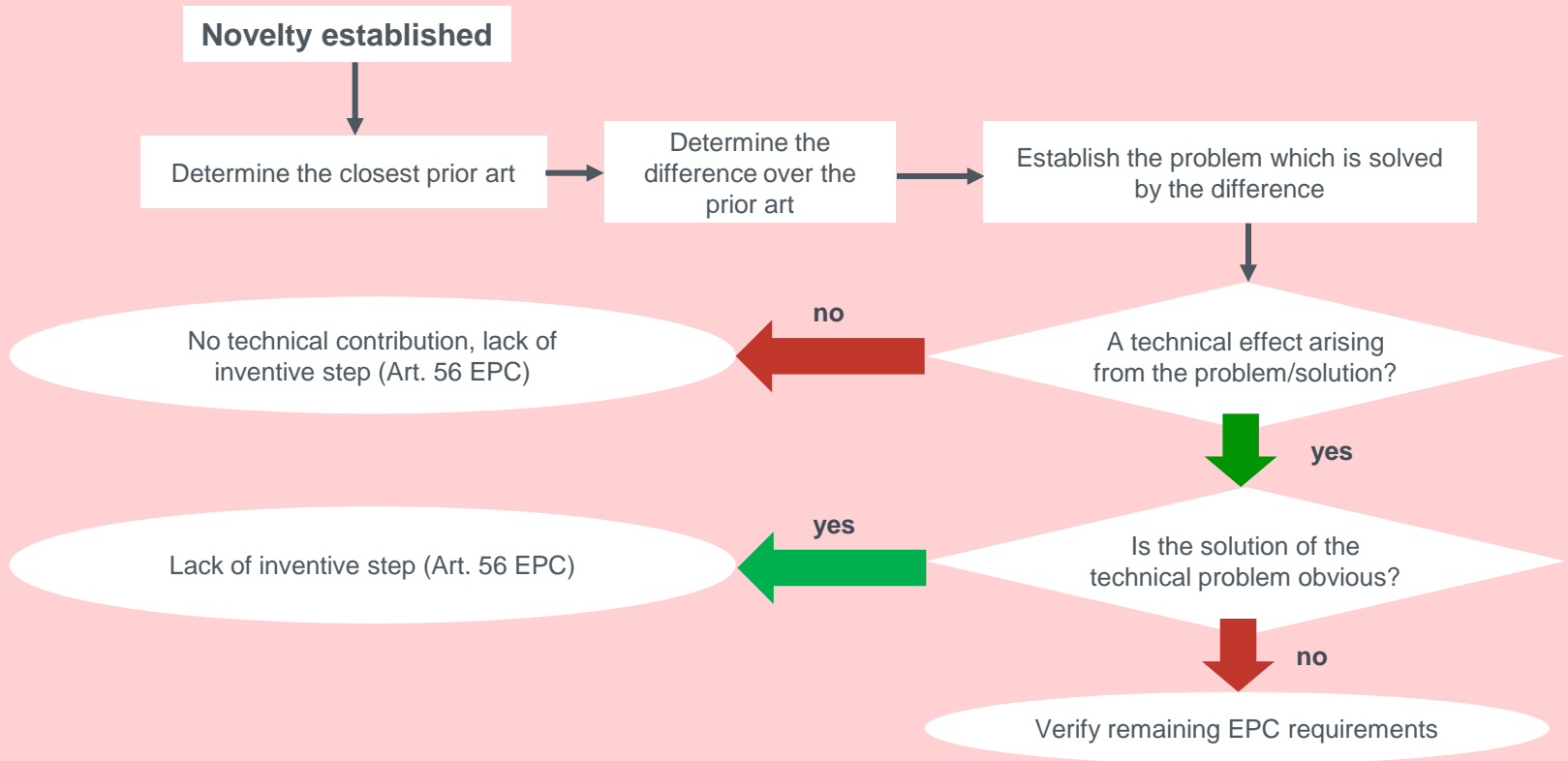
# Assessing computer-implemented inventions: a two-step rocket

1. Technical character
2. Technical contribution

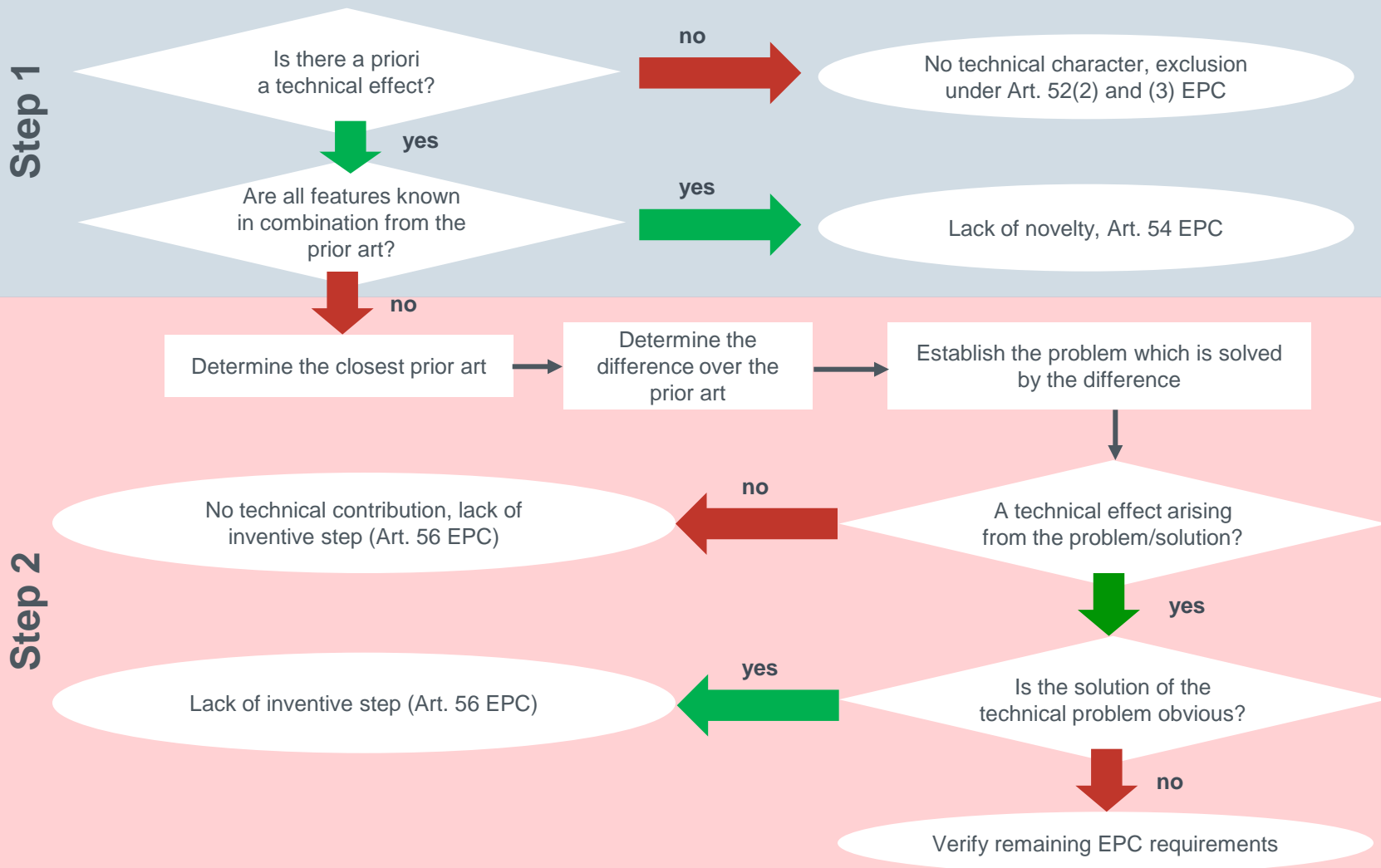
# Examination flowchart (exclusion, novelty) - Step 1



# Examination flowchart (inventive step) - Step 2



# Examination flowchart (overview)



## Article 53(a) - "contrary to 'ordre public' or morality"

- Any invention the **commercial exploitation** of which would be contrary to "ordre public" or morality
- Test: the public in general would regard the invention as **so abhorrent** that the grant of patent rights would be inconceivable (Guidelines for Examination in the EPO, [G-II, 4.1](#))
- Examples:
  - anti-personnel mines or letter bombs
  - biological weapons
  - inventions solely facilitating criminal acts
  - inventions involving disproportionate cruelty to animals
  - inventions the exploitation of which is likely to seriously prejudice the environment presupposed that the threat to the environment be sufficiently substantiated at the time the decision is taken by the EPO (T 0356/93)

## Rule 28 - Exceptions to patentability

- Cloning of human beings
- Modifying the human germline
- Industrial or commercial use of human embryo
- Generation of genetically modified animals, if their production causes suffering without substantial medical benefit  
(not the case in "Onco-mouse", T 315/03)

# Rule 29(1) - the human body and its elements

The human body at the various stages of its formation and development, and the **simple discovery** of one of its elements, including the sequence or partial sequence of a gene, **cannot constitute a patentable invention.**



## Article 53(b) - "plant or animal varieties"

- Plants are patentable
  - if the plant grouping is not a variety
  - if the invention can be used to make more than one particular plant variety
  - as long as no individual plant varieties are mentioned in the claim
- A claim to plants is patentable if it does not individually claim specific plant varieties, even though it may embrace varieties (**G 1/98**)
- Conventional plants obtained by breeding also patentable if they are not varieties
  - sunflower decision (**T 1854/07**)

# Article 53(b) - "essentially biological processes"

## G 2/07 (broccoli) and G 1/08 (tomato)

- Breeding methods for plants or animals which **contain** steps of sexual crossing of whole genomes and subsequent selection are not patentable
  - marker-assisted breeding also **not** patentable
- Genetic engineering methods for introducing new traits into plants or animals are patentable.
- Plants or animals obtained by breeding still patentable according to **G 1/98**.

# Article 53(c) - surgery, therapy and diagnosis

**Purpose** underlying **Article 53(c)**

(socio-ethical and public health considerations)

Medical and veterinary activities should not be restrained by patent rights, i.e. doctors should not be hindered from exercising their professional skills when helping their patients (**G 5/83 and G 2/08, G 1/04, G 1/07**).

# Article 53(c) - therapy and surgery

"... treatment of the **human or animal body**  
by surgery or therapy"

## **Not allowable:**

- incisions, endoscopy, ablation
- dialysis, autologous transfusion

## **Allowable:**

- in vitro methods (e.g. blood testing)
- treatment of a dead body (e.g. excision of heart valves from cadavers)
- treatment of laboratory animals if they are subsequently sacrificed

## Article 53(c) - therapy and surgery

- A **single** surgical or therapeutic step in a **multi-step** method is sufficient to exclude the whole claim from patentability (G 1/04, G 1/07).
- A therapeutic or surgical step may also be **implicit** from the description or dependent claims (e.g. comparing pre- and postoperative tomographic images - see T 1005/98 - or measuring blood pressure if this is done invasively).

# Article 53(c) - therapy

## Non-therapeutic methods

- Cosmetic and agricultural methods or athletic training, provided that the claim is limited to **non-therapeutic indications** and their effects can be clearly distinguished as having no therapeutic benefit.
- Taking an impression in the mouth of a patient.

# Article 53(c) - diagnosis

## Terminology and definitions (G 1/04)

- (i) Examination phase involving the collection of data
- (ii) Comparison with standard values
- (iii) Finding of any significant deviation, i.e. a symptom
- (iv) Attribution of deviation to a particular clinical picture  
("deductive medical or veterinary decision phase")

All of steps (i) to (iv) must be present **at least implicitly** for a claim to fall under the exclusion.