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Inventive step

The EPO approach



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Overview

§ General

§ Problem-solution approach (incl. chemical aspects)

§ Juxtaposition vs combination

§ Synergy

§ Secondary indicia

§ Summary

Inventive step

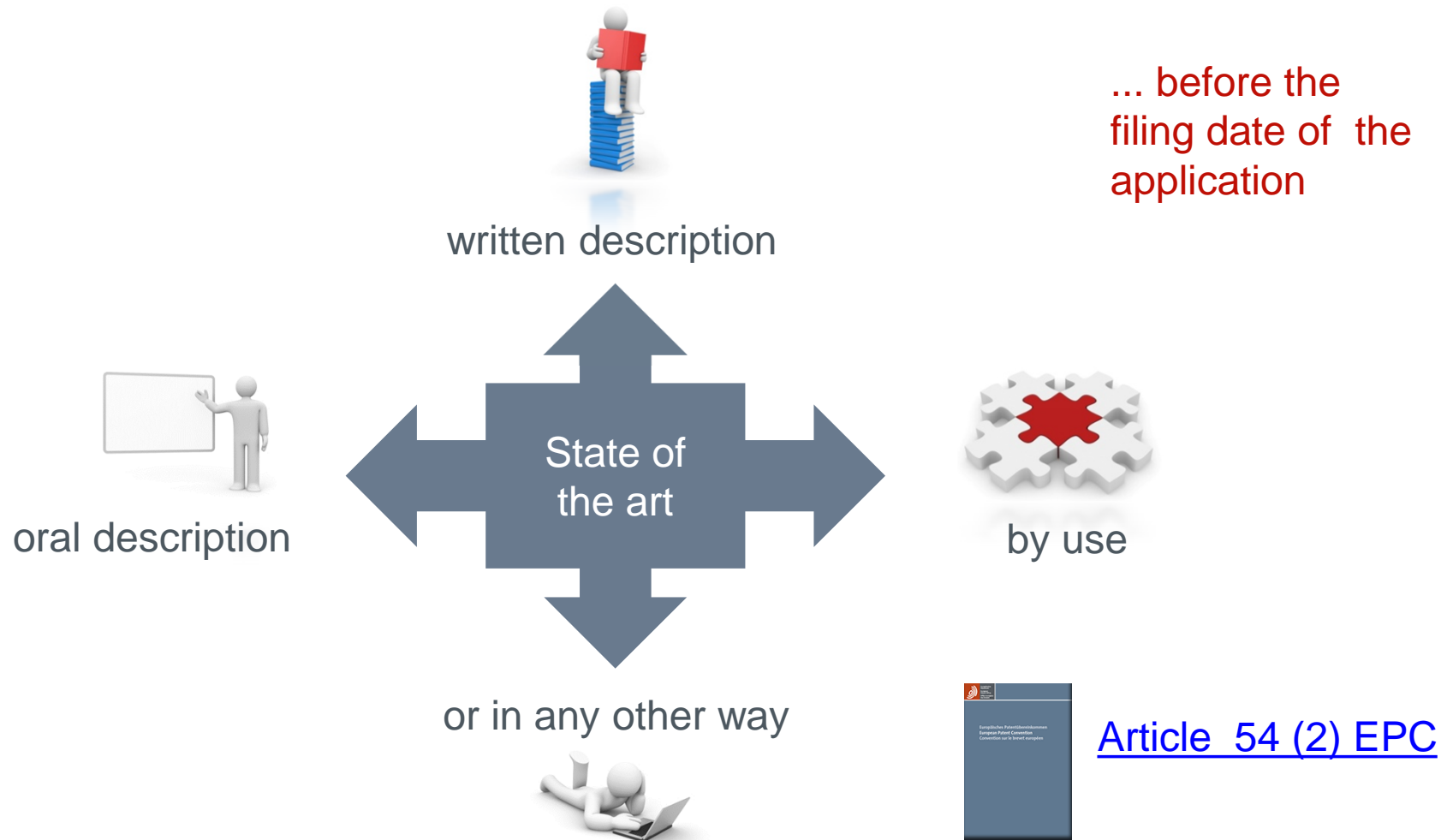
"An invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art."



[Article 56 EPC](#)

What is the "state of the art"?

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



The person skilled in the art (1)



- § 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 their 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
- § Has the same level of skill for assessing inventive step and sufficiency of disclosure

The person skilled in the art (2)

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.

The problem-solution approach

1. Determine the **closest prior art**.
2. Based on this, establish the **objective technical problem** to be solved.
3. Consider whether the claimed invention, starting from the closest prior art and the objective technical problem, would have been **obvious** to a skilled person.



[EPO Guidelines](#)
[G-VII, 5](#)

The problem-solution approach: five questions (1)

1. What is the closest prior art? (Stage 1)
2. What is the difference, in terms of the claimed technical features, between the claimed invention and the closest prior art?
3. What technical effect is caused by this difference?
4. What is the objective technical problem underlying the claimed invention? (Stage 2)
5. Would the skilled person solve this problem in the manner indicated on the basis of the totality of the prior art, without at any stage employing any inventive skill? (Stage 3)

Question 1:

What is the closest prior art?

Determine the closest prior art correctly

The closest prior art is normally the structurally closest prior art, provided that it:

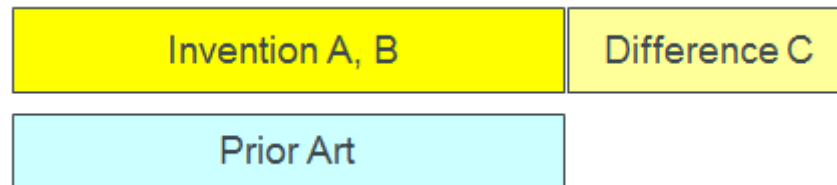
- § Has a similar purpose or effect as the invention
- § Belongs to the same or closely related technical field
- § Constitutes the **most promising starting point** for an obvious development leading to the invention
- § Corresponds to similar use and requires the minimum of structural and functional modifications

Question 2:

What is the difference, in terms of the claimed technical features, between the invention and the closest prior art?

Identify all those features which render the claimed subject-matter of the claim novel **in view of the closest prior art only**.

These are known as the distinguishing features.



Question 3:

What technical effect is caused by this difference?

- § Review the difference between the claimed invention and the closest prior art.
- § Determine which technical effect the invention achieves due to these differences.

There may be no technical effect over the prior art!

The link between the technical effect and the differences must at least be credible: proof/evidence is preferable, sometimes necessary

Some chemistry aspects

§ **Structural similarity**

- T852/91: small difference with little bearing on properties: not inventive
- T989/93: in the absence of appropriate common general knowledge, no possible conclusions about properties of one group of chemical compounds (benzene derivatives) compared to a different group of chemical compounds (naphthalene derivatives)

§ **Pharmacology and bioisosterism**

- T643/96: bioisosterism in pharmacologically active compounds – apply with caution: “what is essential is not whether a particular substructure of a chemical compound is replaced by another isosteric one, but whether information was available on the impact of such a replacement on the pharmacological activity of the specific (group of) compound(s) concerned.”

Question 4: (1/3)

What is the objective technical problem underlying the claimed invention?

§ Subjective problem vs. objective problem

§ Do not include elements of the claimed solution in the objective problem

- This may result in an *ex post facto analysis*.

Question 4: (2/3)

What is the objective technical problem underlying the claimed invention?

If the closest prior art does **not** provide all the effects of the invention that relate to the distinguishing technical features, then the problem is **“how to modify or adapt the closest prior art to achieve the technical effects** which the invention provides over the closest prior art.”

Question 4: (3/3)

What is the objective technical problem underlying the claimed invention?

If the closest prior art does provide all the effects of the invention, but in a different way, then the problem is "**how to modify or adapt the closest prior art to provide an alternative way of obtaining the technical effects** that the closest prior art achieves."

Additional (chemistry) question 4: “Has the objective technical problem been credibly solved?”

§ T939/92 (OJ 1996, 309) : “The question as to whether or not such a *technical effect is achieved by all the chemical compounds* covered by such a claim may properly arise under Art.56 EPC, if this technical effect turns out to be the sole reason for the alleged inventiveness of these compounds.”

§ T668/94: the technical problem can only be taken into account in the assessment of inventive step if it could be accepted as having been successfully solved, i.e. if it were credible that substantially *all the claimed compounds possessed the plant growth regulating activity*

§ -> possibly reformulation of the objective technical problem

Question 5: (1/5)

Would the skilled person solve this problem in the manner indicated and on the basis of the totality of the prior art, without at any stage employing any inventive skill?

§ "would" vs. "could"

§ A combination of two prior art documents is normally used, but a single document may be enough.

Question 5: (2/5)

Would the skilled person solve this problem in the manner indicated and on the basis of the totality of the prior art, without at any stage employing any inventive skill?

§ **If** the prior art (including the closest) does **not** provide an indication that would prompt the skilled person to solve the problem in the way that the inventor solves it

§ **Then** the invention is not obvious

Question 5: (3/5)

Would the skilled person solve this problem in the manner indicated and on the basis of the totality of the prior art, without at any stage employing any inventive skill?

§ **If** the prior art (other than the closest prior art) discloses the same way of solving the objective technical problem as the invention, and

§ **If** this item of prior art prompts the skilled person to combine the solution found with the closest prior art to achieve what the invention achieves,

§ **Then** the invention is obvious

Question 5: (4/5)

Would the skilled person solve this problem in the manner indicated and on the basis of the totality of the prior art, without at any stage employing any inventive skill?

§ **If** the problem is "provide an alternative ...", and

§ **If** the prior art prompts the skilled person to adapt or modify the alternative solution, disclosed in the closest prior art, to arrive at the subject-matter of the claim,

§ **Then** the invention is obvious

Question 5: (5/5)

Would the skilled person solve this problem in the manner indicated and on the basis of the totality of the prior art, without at any stage employing any inventive skill?

§ **If** the prior art discloses several different ways of solving the objective technical problem,

§ **Then** you should

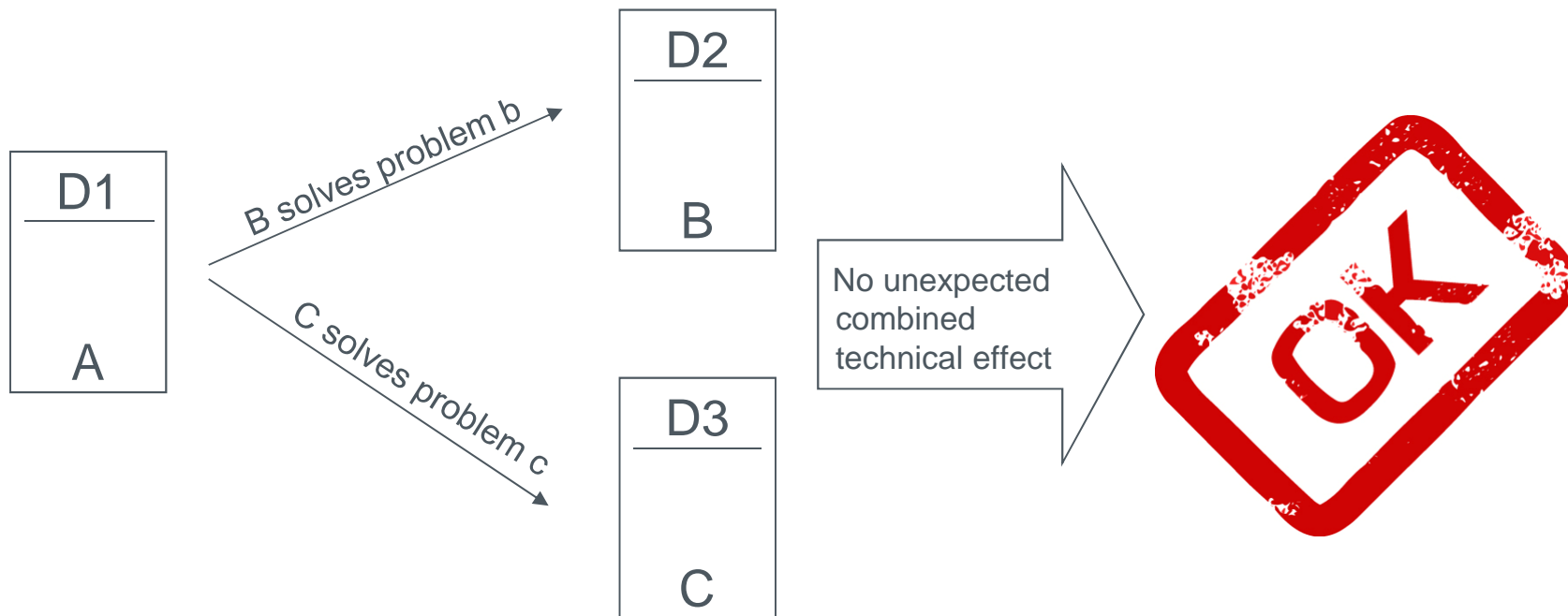
- check if there is an even closer item of prior art
- check whether you have overlooked a technical effect

Juxtaposition

Can we use more than two documents for inventive step?
Combination vs. juxtaposition or aggregation

Invention: A + B + C

Document
combination?

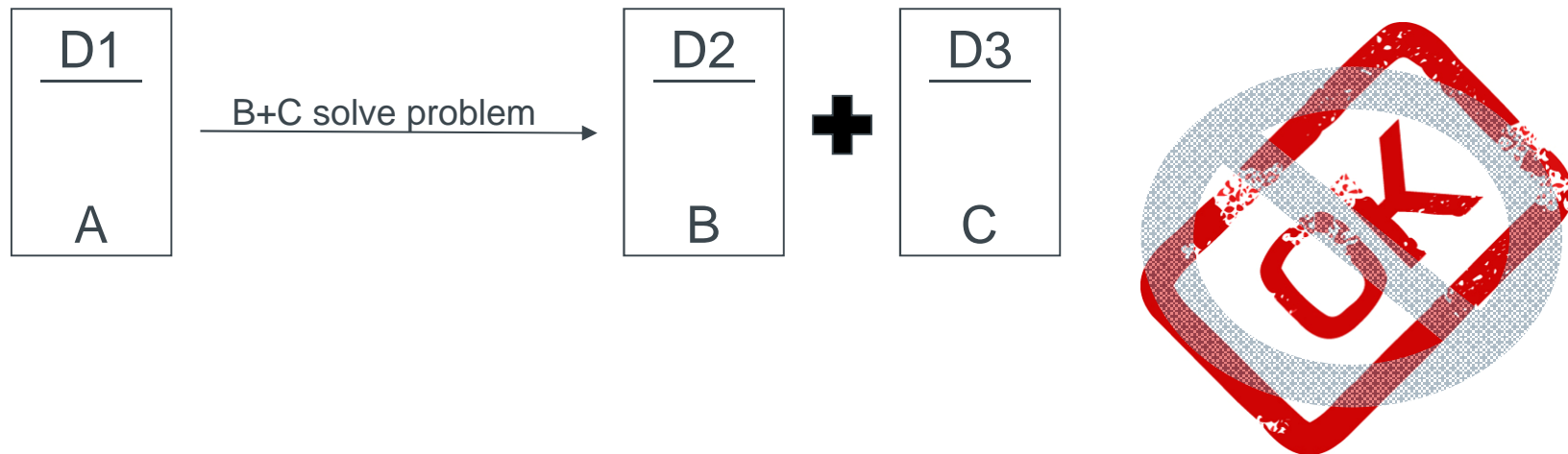


Combination

Can we combine more than two documents for inventive step for solving one problem?

Invention: A + B + C

Document combination?



Synergy

§ Combined technical effect greater than the sum of the technical effects of the individual features

§ Careful analysis of data

§ Be aware that

- synergistic effect may be rendered obvious by teaching of the prior art
- synergy is present but not in comparison with the closest prior art
- synergy is not present over the whole scope of the claim

Positive secondary indicia

- § Might support a finding of non-obviousness resulting from the application of the problem-solution approach
- § Surprising technical effect, such as synergy
- § Overcoming a technical prejudice
- § Satisfaction of a long-felt need

- § Problem of bonus effect

Negative secondary indicia

- § An arbitrary choice from a host of possible solutions
- § routine experiments, trial and error
- § mere automation of manual operations
- § invention follows inevitably from developments in the prior art (“one-way street”)
- § invention consists merely in a new use of a well-known material employing the known properties of that material

Summary of the EPO approach to inventive step

- § Basis is the problem-solution approach
- § Examination of inventive step in the light of the state of the art and of a technical problem based on it
- § Invention must have been credibly made (technical problem solved) at the filing date
- § Indicia cannot replace the problem-solution approach but can complement it usefully
- § Synergy is not always an indication for inventive step: always consider the prior art