

Learning path for patent examiners

Clarity: Entry level

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Introduction

This publication, "Clarity, Entry level", is part of the "Learning path for patent examiners" series edited and published by the European Patent Academy. The series is intended for patent examiners at national patent offices who are taking part in training organised by the European Patent Office (EPO). It is also freely available to the public for independent learning.

Topics covered include novelty, inventive step, clarity, unity of invention, sufficiency of disclosure, amendments and search. Also addressed are patenting issues specific to certain technical fields:

- patentability exceptions and exclusions in biotechnology
- assessment of novelty, inventive step, clarity, sufficiency of disclosure and unity of invention for chemical inventions
- the patentability of computer-implemented inventions, business methods, game rules, mathematics and its applications, presentations of information, graphical user interfaces and programs for computers
- claim formulation for computer-implemented inventions

Each publication focuses on one topic at entry, intermediate or advanced level. The explanations and examples are based on the European Patent Convention, the Guidelines for Examination in the EPO and selected decisions of the EPO's boards of appeal. References are made to the Patent Cooperation Treaty and its Regulations whenever appropriate.

The series will be revised annually to ensure it remains up to date.

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1. Learning objectives

Participants to this course will learn:

- the definition and the legal basis of clarity, conciseness and support by the description (Article 84 EPC) and the reasons for assessing clarity
- the importance of claim categories
- basic reasons for raising a lack of clarity
- the concepts of claim interpretation and assessment of scope

2. The legal basis for clarity

Article 84 EPC defines the matter for which protection is sought.

Article 84 EPC further defines clarity as a patentability criterion:

"The **claims shall be clear** and concise and be supported by the description."

The requirement that the claims must be clear applies to individual claims and to the claims as a whole.

Article 84 EPC defines two additional requirements for patentability: conciseness and support by the description.

Legal references:

Art. 84 EPC, GL F-IV, 4.1

3. The claims must be self-contained

The claims must be understandable by themselves.

For example, chemical compounds can be defined by a depicted formula.

Allowable exceptions where a claim refers to the description are:

- an invention involving some peculiar shape that is illustrated in the drawings but cannot be readily defined either in words or by a simple mathematical formula
- an invention relating to chemical products, some of the features of which can be defined only by means of graphs or diagrams
- for the acknowledgement of the test method used to determine a parameter present in the claim and where the test method is not a standardised test method but is defined in the description. Where appropriate, a reference to the description may be allowed, i.e. when the addition of the whole passage of description giving the definition of said test method would jeopardise the conciseness of the claim. For example an expression after the parameter such as "as measured/determined according the test method disclosed herein" or "measured/determined as described herein" may be used in the claim.

Legal references:

R. 43(6) EPC, GL F-IV, 4.17, GL F-IV, 4.11

4. Legal certainty and scope of protection

The scope of protection of a patent is defined by the subject-matter claimed. There should be no doubt as to the subject-matter covered by the claims.

Claims are clear when a skilled person has no doubt about what falls under the scope of a claim.

In view of the differences in the scope of protection which may be attached to the various categories of claims, the wording of a claim must leave no doubt as to its category.

Legal references:

Art. 84 EPC, GL F-IV, 4.1

5. The importance of examining clarity

The requirement of clarity is not a ground for opposition or revocation in national proceedings.

Compliance with the requirement of clarity is assessed only during examination proceedings.

The lack of clarity of a feature may have an influence on the interpretation of said feature. Depending on how a feature is interpreted, the scope of the prior-art search carried out by the examiner may be different. For example:

- an unclear feature may not be taken into consideration since it cannot be understood what is meant thereby
- the scope of the searched subject-matter may differ depending on how an unclear feature is interpreted

In both of the above cases, the examiner should inform the applicant of which feature was considered to be unclear and why. Furthermore the examiner should also inform the applicant, where appropriate, of how this unclear feature was interpreted by him/her.

Legal references:

Art. 100 EPC, Art. 138 EPC

6. Claim categories and clarity

A claim can refer to an entity (e.g. apparatus, product, system) or to an activity (e.g. method, process, use).

The second basic kind of claim ("process claim" or "method claim") is applicable to all kinds of activities in which the use of a material product for effecting the process is implied; the activity may be exercised upon material products, upon energy, upon other processes (as in control processes) or upon living things.

The scope of protection is different in both cases.

The wording of a claim should leave no doubt as to its category.

Examples

Examples of entities are "a steering mechanism incorporating an automatic feed-back circuit ..."; "a woven garment comprising ..."; "an insecticide consisting of X, Y, Z"; or "a communication system comprising a plurality of transmitting and receiving stations".

Examples of unclear categories:

1. "The improvement of a transmission system comprising a ..." is not clear since the improvement can be both an activity (transmission method/protocol) and an entity (controller).
2. "A communication between two buildings" could be a communication system or a way of communicating.
3. "Connection of a transceiver to a telecommunications network" (NB: a transceiver is a unit that is capable of both transmitting and receiving) is ambiguous as it does not make it clear whether it relates to a method or to an arrangement for connecting the transceiver.
4. "A mobile telephone system comprising a plurality of base stations, a plurality of mobile stations and a control unit, characterised in that at power-on the control unit registers each mobile station at a respective base station and assigns to each mobile station a predetermined frequency channel for communicating with the respective base station."

Despite being directed to an apparatus (i.e. a mobile telephone system), the claim is defined in terms of the operations carried out by the apparatus. This should be reserved for a method claim. A claim to an apparatus should be worded in terms of the structural features which allow said operations to actually be performed. Since the claim contains a mixture of method and apparatus features, its category is not clear.

One solution to overcome the lack of clarity could be:

"A mobile telephone system comprising a plurality of base stations, a plurality of mobile stations and a control unit, characterised in that ~~at power-on~~ the control unit **is configured to, at power-on,** registers each mobile station at a respective base station and assigns to each mobile station a predetermined frequency channel for communicating with the respective base station."

Other options similar to "is configured to" are e.g. "for", "is adapted to" or "is suitable for".

5. "A method for storing information items in a computer memory system of the type including a plurality of memory cells comprising means for selecting a memory cell and a writing circuit for writing a predetermined information item in the selected memory cell."

The claim is directed to a method but is defined in terms of structural features of the memory cells and writing circuit that make up the system for carrying out the method, without any reference to the procedural steps required for actually storing the information items in the computer memory.

One solution to overcome the lack of clarity could be:

"A method for storing information items in a computer memory system of the type including a plurality of memory cells comprising ~~means for~~ selecting a memory cell and a writing circuit ~~for~~ writing a predetermined information item in the selected memory cell."

Legal references:

R. 43(2) EPC, GL F-IV, 3.1

7. Relative or approximate wording

Relative terms, e.g. "high", "thin", "wide" or "strong", are potential sources for a lack of clarity. However, if the term has a well-recognised meaning in the particular art, e.g. "high-frequency" in relation to an amplifier, and this is the intended meaning, the term is clear.

A problem with relative terms is that no reasonable comparison with the prior art is possible. The scope of protection is not clear either.

Where terms such as "about" or "approximately" are applied to a particular value (e.g. "about 200°C" or "approximately 200°C") or to a range (e.g. "about x to approximately y"), the value or range is interpreted as being as accurate as the method used to measure it. If no error margins are specified in the application, the same principles described in the Guidelines for Examination, G-VI, 8.1, apply, i.e. the expression "about 200°C" is interpreted as having the same round-off as "200°C". If the application specifies error margins, they must be used in the claims in place of the expression containing "about" or similar terms.

When terms such as "substantially" or "approximately" are applied to a structural unit of an apparatus (e.g. "a tray plate with a substantially circular circumference" or "a tray plate with an approximately curved base"), the expression containing the term "substantially" or "approximately" will be interpreted as a technical feature being produced within the technical tolerance of the method used to manufacture it (e.g. cutting a metal is much more accurate than cutting a plastic; or cutting with a computer numerical control (CNC) machine is more accurate than cutting by hand).

If the application suggests that the use of terms such as "about", "approximately" or "substantially" extends either the interval claimed by a value and/or range outside the error margins of the measurement system or the structural unit beyond the manufacturing tolerances, then the wording becomes vague and undefined, i.e. the application does not fulfil the requirements of Article 84 EPC, because its presence prevents the invention from being unambiguously distinguished from the prior art with respect to novelty and inventive step.

Examples of relative wording

Description:

A digital camera is described that is operable in low temperatures. This is achieved by coating the casing of the camera's very large-scale integration circuit with a layer of a specific substance X, which results in better insulation. The thickness of the layer must be below 10 nm, otherwise its adherence to the casing is impaired.

Claim 1: a digital photo camera that comprises a very large-scale integration unit and the casing of which is coated with a thin layer of substance X.

Is this claim clear?

The term "very large-scale integration" is clear as it has a generally accepted meaning in the field of computer technology.

The feature "thin layer" is not clear since the relative term "thin" does not have any pre-assigned, generally accepted meaning in this technical field.

Examples of approximate wording:

1. If the application suggests that an icosagon (20-sided polygon) is also a "substantially circular circumference" for a metal tray produced by a CNC waterjet cutting machine, this renders the scope of the claims unclear because:
 - the tolerance indicated by the application is outside the tolerance of the manufacturing method (a CNC waterjet cutting machine approximates a circular circumference by using a polygon with hundreds of sides); and
 - if an icosagon is also a "substantially circular circumference", what about an enneadecagon (19-sided polygon) or an octadecagon (18-sided polygon)? When does a polygon stop being a "substantially circular circumference"? How can this be assessed objectively by the person skilled in the art?
2. Claim: a resonant cavity for a loudspeaker having a substantially spherical shape.

The term "substantially" means that the shape of the cavity is spherical within the physical limits of measurements and thus is clear.

Legal references:

GL F-IV. 4.6.1, GL F-IV. 4.7

8. Trademarks in applications

The use of trademarks and similar expressions in claims is not allowed as it does not guarantee that the product or feature referred to is not modified while maintaining its name during the term of the patent.

They may be allowed exceptionally if their use is unavoidable and they are generally recognised as having a precise meaning.

Examples

Although "Persil" is a well-known detergent trade name, it does not have a precise meaning (its composition may change over time).

"Teflon" is an exception because it is an internationally accepted descriptive term having a precise meaning.

Legal references:

GL F-IV. 4.8

9. Functional features

Functional features are described by their respective functions, e.g. "an amplifier", "a surfactant", "a source of heat", "a means for fastening".

A claim may broadly define a feature in terms of its function if the skilled reader would appreciate which means could be used to obtain that function.

A functional feature offers protection for equivalent means without having to mention them in the claims.

Means-plus-function features ("means for ...") are a type of functional feature and hence do not contravene the requirements of Article 84 EPC. Any prior-art feature suitable for carrying out the function of a means-plus-function feature will anticipate the latter. For example, the feature "means for opening a door" is anticipated by both a door key and a crowbar.

Functional features in chemistry:

- Any group of chemical compounds must be well known (e.g. textbook).
- Tests must be available from the application (or common general knowledge) to allow a compound to be tested for the desired activity.
- It must be clear from the disclosure of the application that the functionality is responsible for the desired effect.

Examples

Example 1

Claim 1: "A mobile device, comprising means for:

- sending a data request to a server;
- receiving data sent by the server;
- processing the data [in some way]; and
- displaying the processed data to a user of the mobile device."

Example 2

"1. An eyeglass lens grinding machine for processing a lens such that the lens is fitted in an eyeglass frame, said machine comprising:

at least a grinding wheel for bevelling the lens;

means for receiving frame configurational data on the eyeglass frame and layout data to be used in providing a layout of the lens relative to the eyeglass frame;

means for detecting an edge position of the lens on the basis of the received frame data and layout data;

means for determining a first bevel path by calculation depending on the result of detection by said edge position detecting means;

means for determining a second bevel path obtained by tilting said first bevel path such that said second bevel path passes through a desired position on a lens edge;

and means for controlling the grinding wheel during the bevelling of the lens on the basis of said second bevel path."

Example 3

"1. An eyeglass lens grinding machine for processing a lens such that the lens is fitted in an eyeglass frame, said machine comprising

at least a grinding wheel for bevelling the lens;

a computer adapted to:

- receive frame configurational data on the eyeglass frame and layout data to be used in providing a layout of the lens relative to the eyeglass frame;
- detect an edge position of the lens on the basis of the received frame data and layout data;
- determine a first bevel path by calculation depending on the result of detection by said edge position detecting means;
- determine a second bevel path that is obtained by tilting said first bevel path such that said second bevel path passes through a desired position on a lens edge; and
- control the grinding wheel during the bevelling of the lens on the basis of said second bevel path."

Each of these claims in Example 2 and Example 3 is new over prior art disclosing an eyeglass lens grinding machine comprising a grinding wheel and a computer for controlling the grinding wheel if the specific processing steps are not disclosed in the prior art. When "means for" refers to computer means, the processing steps being defined as "means for + function" (first claim) and "computer adapted to + function" (second claim) are to be interpreted as limiting. Therefore, a prior-art document disclosing an eyeglass lens grinding machine comprising at least a grinding wheel for bevelling the lens and a computer only anticipates these claims if the prior-art document also discloses that the computer is programmed to carry out the claimed steps.

Example 4

"Apparatus for shaking articles comprising a base, a container, legs and means for oscillating the container on the legs" illustrates a feature which is broadly defined by its function ("means for oscillating"). However, it can be accepted as being clear since it is the feature's function which is important here, so any common arrangement that achieves the desired function (i.e. oscillating the container on the legs) would be suitable.

Consider also: "A cash dispenser terminal including a cash dispensing section, receiving means for receiving a user card, reading means for reading a security code from the user card and enabling means for enabling the cash dispensing section such that cash is dispensed to the user."

Example 5

"Fastening means characterised in that they consist of a polymeric material with additive A" is clear since "fastening means" is a synonym for a fastener. Functional features are allowable provided that a person skilled in the art would have no difficulty in providing several ways of performing this function. The process step of fastening is known to the person skilled in the art and may be easily performed in several ways in order to obtain the desired result, for example with bolts, screws, buttons, clamps, clips, pins, nails, pegs, etc.

Legal references:

GL F.IV. 4.13.2

10. Broad claims

Broad claims are not automatically unclear, i.e. the broadness of a scope of protection is not per se a sufficient ground for a lack of clarity, provided that all the terms of the claim are clear.

As an example, Markush claims covering a huge number of alternative compounds are allowable under Article 84 EPC.

Another example is when a certain extent of generalisation may be allowed for the definition of the invention (see GL F-IV, 6.2).

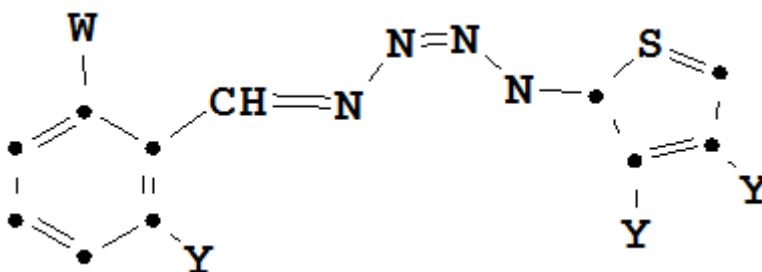
However, where there are discrepancies between the claims and the description, the claims are not sufficiently supported by the description (Article 84 EPC) and also, in most cases, the invention is not sufficiently disclosed (Article 83 EPC). Sometimes an objection of lack of novelty arises. Broad claims may also cover embodiments for which a purported effect has not been achieved, leading to a lack of inventive step.

The broadness of the claim may also be an issue under Art. 84 EPC if it appears from the description that essential features for the definition of the invention are missing (see GL F-IV, 4.5.2). In such a case an objection for lack of clarity may be raised (lack of essential features).

Examples

Examples of broad wording: "substituted alkyl", "fastening means", "excipient", "alloy".

An example of a Markush claim:



with "Y" being selected from the group of H, C₁-C₅ alkyl, C₁-C₅ alkenyl, -CN, -CO-CH₃ and NH₂, "W" being selected from H, halogen and NH₂.

Legal references:

Art. 84 EPC, Art. 83 EPC, GL F-IV, 4.22, GL F-IV, 6.2, GL F-IV, 4.5.2

11. Interpreting claims

Each claim must be read giving the words the meaning and scope which they normally have in the relevant art, unless in particular cases the description gives the words a special meaning, by explicit definition or otherwise. Moreover, if such a special meaning applies, the division will, so far as possible, require the claim to be amended whereby the meaning is clear from the wording of the claim alone.

The claim must also be read with an attempt to make technical sense out of it. Doing so may involve departing from the strict literal meaning of the wording of the claims. However, Article 69 EPC and its Protocol do not provide a basis for excluding what is literally covered by the terms of the claims.

Legal references:

GL F-IV, 4.2

12. Interpretation of expressions such as "Apparatus for"

If a claim commences with such words as "Apparatus for carrying out the process ...", this must be construed as meaning merely apparatus suitable for carrying out the process.

An apparatus which otherwise possesses all of the features specified in the claims but which is unsuitable for the stated purpose or requires modifications to enable it to be so used for said purpose is normally not considered to anticipate the claim.

Similar considerations apply to a claim for a product for a particular use.

For example, if a claim refers to a "mould for molten steel", this implies certain limitations for the mould. Therefore, a plastic ice cube tray with a melting point much lower than that of steel does not come under the claim.

Similarly, a claim to a substance or composition for a particular use is construed as meaning a substance or composition which is in fact suitable for the stated use; a known product which *prima facie* is the same as the substance or composition defined in the claim but which is in a form which renders it unsuitable for the stated use does not deprive the claim of novelty. However, if the known product is in a form in which it is in fact suitable for the stated use, though it has never been described for that use, it deprives the claim of novelty.

Examples

1.

Claim: a stainless-steel hook **for** fishing, in the shape of a half circle, pointing upwards when hung up.

Crane hooks are not suitable for fishing.

2.

Claim: An X-ray apparatus **for** taking X-ray images of medium-size animals.

Prior art: an X-ray apparatus for taking X-ray images of the human body.

Specifying that the X-ray apparatus is for medium-size animals does not impose any limiting effect on the claimed apparatus as a standard X-ray apparatus as used in hospitals can also be used for medium-size animals.

3.

Claim: A furnace for sintering in metal injection moulding.

Would a baking oven anticipate the claim?

A baking oven would require specific structural features and the capability to heat the material to very high temperatures (near the melting point of the metal) to be suitable for this sintering step.

Baking ovens do not anticipate the claim.

Legal references:

GL F-IV, 4.13.1

13. Independent and dependent claims

An **independent** claim is directed to the essential features of the invention. Any such claim may be followed by one or more **dependent** claims, which concern "particular embodiments" of the invention and include the features of the independent claim.

Dependent claims must contain – if possible at the beginning – a reference to the claim whose features they include.

A claim may be dependent on an independent or a dependent claim.

A claim may refer to another claim without being dependent on it.

- Examples:
 - different categories
 - a claim not including all the features of the claim it refers to

In some cases, a dependent claim may define a particular feature or features which may appropriately be added to more than one previous claim (independent or dependent). It follows that a dependent claim may refer back to one or more independent claims, to one or more dependent claims, or to both independent and dependent claims.

An independent claim may refer explicitly to alternative solutions, or these alternatives may also be claimed separately in dependent claims. Claims of this kind may seem redundant but may be important for applicants in some national procedures if they wish to restrict their claims.

A dependent claim referring explicitly to independent claims in two categories as alternatives cannot be objected to on this ground alone. For example, if the invention relates to both a composition and a use of that composition, it is possible for a claim specifying further features of the composition to be made dependent on both the independent claim for the composition and the independent claim for its use.

Examples

Example 1

Claim 1: "An antibody characterised by features A and B."

Claim 2: "Antibody defined in claim 1, further comprising feature C."

Claim 3: "A composition comprising an antibody according to claim 1."

Example 2

Claim 1: "A winter tyre characterised by an R-shaped profile."

Claim 2: "A car comprising a set of winter tyres according to claim 1."

Claim 2 is a dependent claim appended to claim 1 since it includes all the features of claim 1.

Example 3

Claim 1: "A winter tyre characterised by an R-shaped profile and a rubber mixture that contains 55% XYZ."

Claim 2: "A rubber mixture according to claim 1 that further contains 10% of the additive ABC."

Despite the reference to claim 1, claim 2 is an independent claim as it does not include all the features of claim 1 (the features relating to the winter tyre and its R-shaped profile are missing).

Example 4

Claim 1: "A winter tyre characterised by an R-shaped profile and a rubber mixture that contains 55% XYZ."

Claim 2: "A winter tyre as claimed in claim 1 in which the R-shaped profile is replaced by a W-shaped profile."

Despite the reference to claim 1, claim 2 is an independent claim as it does not include all the features of claim 1 (the features relating to the R-shaped profile of the tyre are missing, so claim 2 in fact specifies a different tyre from that of claim 1).

Example 5

Claim 1: "A diesel engine characterised by features A and B." (*independent claim*)

Claim 2: "The diesel engine as claimed in claim 1, further comprising feature C." (*dependent claim*)

Claim 3: "A car comprising a diesel engine according to claim 1." (*dependent claim*)

Claim 4: "A diesel engine according to claim 1 wherein feature B is replaced with feature D." (*hidden independent claim*)

Legal references:

R. 43(3), (4) EPC, GL F-IV, 3.4

14. The legal basis for support by the description

Under Article 84 EPC, the claims must also be supported by the description.

This means that there must be a basis in the description for the subject-matter of every claim and the scope of the claims must not be broader than is justified by the extent of the description and drawings and also the contribution to the art.

Examples

Claim: power amplifier having a gain greater than 70 dB.

Case A: with reference to a figure, the description describes a circuit X which makes it possible to obtain that gain.

Case B: none of the embodiments arrives at the claimed gain value, but circuit X above is disclosed in the priority document.

Case C: as for case B, but circuit X is briefly described in the abstract.

Legal references:

Art. 84 EPC, GL F-IV, 6.1

15. The legal basis for conciseness

Under Article 84 EPC, the claims must also be concise.

The requirement that the claims must be concise refers to the claims in their entirety as well as to the individual claims. The number of claims must be considered in relation to the nature of the invention the applicant seeks to protect.

Undue repetition of wording, e.g. between one claim and another, is to be avoided by the use of the dependent form.

The conciseness requirement also applies to dependent claims in respect of both their number and content. For example, repeating subject-matter that has already been claimed is unnecessary and negatively affects the conciseness of the claims.

Similarly, the number of dependent claims should be reasonable. What is or what is not a reasonable number of claims depends on the facts and circumstances of each particular case. The interests of the relevant public must also be borne in mind.

The presentation of the claims must not make it unduly burdensome to determine the matter for which protection is sought.

Objections may also arise where there is a multiplicity of alternatives within a single claim if this renders it unduly burdensome to determine the matter for which protection is sought.

Legal references:

Art. 84 EPC, GL F-IV, 5

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Munich
Germany
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European Patent Academy
academy@epo.org