

Examiners' Report – Paper C 2024

Purpose and extent of the examiners' report

The purpose of the examiners' report is to enable candidates to prepare for future examinations (Regulation on the European qualifying examination for professional representatives, Article 6 (6)).

The examination of 2024 was held online and split in two parts. Technical aspects of the online exam are not part of this report.

1. Introduction

This year's paper involved discussion of novelty, inventive step and added subject-matter, as well as considerations regarding partial priorities and claims comprising both technical and nontechnical features (Guidelines G-VII, 5.4). Attacks based on insufficiency of disclosure (Article 100(b) EPC) are not accepted in Part C of the exam (IPREE, Rule 25(5)). Each part of the examination required dealing with the documents at hand within the allotted time.

The examination documents for part 1 contain a client's letter, Annex 1 (A1, the patent to be opposed) and Annexes 2 to 5 (A2 – A5). The client's letter gives information regarding the available parts of A1 and how these parts are related to two priority documents. The client's letter also gives information regarding amendments to A1 during the examination procedure and information regarding A2 and its priority. Furthermore, the client's letter contains a statement related to specific commercial interests and requests the attorney to cover the most probable fallback positions for claim 1. Only claims 1 – 3 of A1 are available. Independent claim 1 covers a charging pad having a layer of magnetic material with constituents for which ranges are specified. Dependent claim 2 defines restrictions to the ranges in claim 1. Independent claim 3 regards a charging pad having a layer of magnetisable concrete.

In part 2 of the examination, the client's letter gives information regarding the further available parts of A1 and how these parts are related to the two priority documents. The examination documents for part 2 contain A2 – A5 of part 1 and additionally Annexes 6 and 7 (A6, A7). Claims 4 – 7 of A1 are newly provided in part 2 of the examination. Independent claim 4 covers a charging system. Independent claim 5 defines a method for controlling a charging system. Dependent claims 6 and 7 both refer to claims 4 and 5 and define restrictions on a signal received in a method step of claim 5. Regarding dependent claim 6, the restrictions are related to a detection circuit of claim 4. In dependent claim 7 the restrictions are related to a price of electric energy.

In A7 the reference signs in the description do not match those in the figure. This inconsistency does not have a bearing on the attacks but was taken into account during marking the candidates' answers.

2. General comments

All the information necessary to oppose the patent is found in the examination documents, which include Annex 1 and the client's letters. Candidates shall not use any special knowledge they may have of the technical field of the invention (Implementing provisions to

the Regulation on the European qualifying examination for professional representatives, Rule 22 (3)).

The examination documents comprise definitions of technical nature related to claim features, aspects of the related technical effects and objective technical problems as well as motivations and hints. Accordingly, marks were awarded for use of this information and argumentation based on it.

In candidate's answers, the use of information requires citation of the specific reference in the relevant document (e.g. paragraph, line, claim, figure, as appropriate). If prior art uses different terminology to the feature in a claim, a full reasoning requires an explanation why the meaning is the same, on the basis of the information provided in the Annexes.

For example, in this year's paper the equivalence of the term "solenoid" to the feature "coil" in the claims of Annex 1 was to be established based on the properties listed in A4§3 which correspond to those stated in A1§5 (conductive trace with several concentric windings).

For inventive step attacks the candidate's answers were given marks within the structure of the problem-solution approach (Guidelines G-VII.5), even if an answer did not follow it.

The problem-solution approach requires *identification of the closest prior art* for each inventive step attack. A substantiated argumentation of the choice includes a reason why some prior art is chosen as the most promising starting point to argue lack of inventive step (which is not necessarily the prior art with "the highest number of common technical features").

For example, in this year's paper a possible motivation for choosing A3 as closest prior art against claim 1 is that its double-O structure also has the purpose of reducing sensitivity to misalignment (see A1§7 and A3§2).

The argumentation against inventive step should clearly identify the *distinguishing features* of the claim compared to the closest prior art. The *technical effect* associated to this difference is an advantage which has to be identified in the patent to be opposed and the appropriate basis must be cited.

The *objective technical problem* to be solved has to be established based on the technical effect. However, the objective technical problem must not contain pointers towards the claimed solution, so, typically, the objective technical problem and the technical effect are not identical.

A comprehensive reasoning for lack of inventive step includes a substantiated argumentation *why another item of prior art would be considered*, e.g. by pointing to a specific part of another document that is related to the same purpose or the same objective technical problem.

For example, in this year's paper, the argumentation against inventive step of claim 3 involves the consultation of A4. A substantiated argument why A4 should be consulted requires citing references in A4 related to reducing leakage of unwanted radiation (see A4§5,§6,§8).

The reasoning for lack of inventive step should also include a substantiated argumentation as to *"how and why" one arrives at the subject-matter of a claim* when combining the teaching of items of prior art. A generic statement such as "By combining A4 and A5 one arrives at claim 5." does not include an explanation of "how and why" the modification would be made.

Alternatively to the argumentation against inventive step set out in the "possible solution", marks were awarded depending on the argumentation provided, in particular for motivating why and how certain modifications would be made.

Also, if an attack for an antecedent claim has not been awarded marks, the continuation of that attack in a dependent claim was still taken into account depending on its merits.

Marks for attacks on claims 1 – 3 were only awarded if the respective attack was made in part 1 of the examination.

3. Notice of opposition

For the opposition to be admissible it is required that the patent to be opposed as well as the opponent are identified. Payment of the opposition fee has to be indicated. It should be borne in mind that the intended opponent is the company and not the person signing the client's letter.

All relevant information, a statement of the extent to which the European patent is opposed, opposition grounds, evidence, facts and arguments have to be in the answers. Text submitted as part of a candidate's answer has to be clearly related to a line of argumentation to be awarded marks (this is usually not the case for feature tables or copied claim text pasted arbitrarily with a few features identified).

3.1. Effective dates of the claims and prior art (18 marks)

For part 1 of the exam the information provided in the first letter from the client was to be used to establish the effective dates of claims 1 – 3 as well as the status of A2 to A5 as prior art with respect to these claims.

For part 2 of the exam the information provided in the second letter from the client was to be used to establish the effective dates of claims 4 – 7 as well as the status of A2 to A7 as prior art with respect to these claims.

Claim 1, amended during examination, contains added subject-matter. The instructions from the client regarding the most likely fallback positions were expected to prompt objections to the combinations of subranges disclosed in the originally filed description in anticipation of a restriction by the patentee. This requires an analysis regarding the partial priorities of the disclosed combinations of subranges (cf. G2/98 & G1/15). A full reasoning regarding the effective dates also requires demonstrating that part of the claim was not entitled to priority as neither of the priority documents of A1 were the first application for the subject matter.

The client's letter contains relevant information regarding EP3383351, its relation to A2, and its publication date. These two documents differ in the status concerning Art. 54 (2) EPC and Art. 54 (3) EPC, wherefore it was expected that candidate's answers clearly designate which of the documents is used in attacks.

Although A7 is only prior art under Art. 54 (3) EPC, it can be used as evidence for general knowledge available before the priority date of the patent (relevant for the expected attacks against claims 5 and 7).

3.2. Claim 1 (23 marks)

Regarding claim 1 as granted an objection under Art. 100 c EPC was expected.

The argumentation regarding added subject-matter requires essentially the same analysis as for the partial priorities and leads to the identification of disclosed combinations of subranges. These form natural fallback positions against which separate attacks were expected, in line with the instructions from the client.

For the first alternative (with the combination of CoFeNi from 10 to below 20 wt% and FeCuSiB at 30 - 40 wt%) an inventive step attack using A3 and A5 was expected and considered sufficient to comply with the client's request concerning probable fallback positions.

Marks for attacking the second alternative were awarded in the marking scheme for claim 2 in view of the equivalence in scope.

3.3. Claim 2 (4 marks)

A2 discloses the features of claim 2. For full marks the distinction between EP3383351 (prior art under Art. 54 (2) EPC) and A2 (prior art under Art. 54 (3) EPC) had to be made.

3.4. Claim 3 (12 marks)

An inventive step attack starting from EP3383351 was expected (A2 as such cannot be validly used according to Art. 56 EPC). A3 is not a suitable starting point because it relates to a car charging pad which is incompatible with magnetic concrete (cf. A1§17).

3.5. Claim 4 (8 marks)

A5 discloses a charging system having all features of claim 4, therefore a novelty attack was expected and considered sufficient.

3.6. Claim 5 (15 marks)

A7 discloses a method for controlling a charging system having all features of claim 5. However, A7 is prior art under Art. 54 (3) EPC only, therefore a further attack was expected.

A6 is evidence that OS-Corp's Model Q was made available to the public by sale before the priority date of A1, therefore the information in A6 regarding Model Q was useable as prior art under Art. 54 (2) EPC. A6 discloses that the battery charging system of Model Q has most of the features of claim 5 but is silent on the aspect of the location of where the electrical connection is caused to be inactive. This difference requires an argumentation under Art. 56 EPC. A complete line of reasoning requires reference to the standard RFC-7511-x of 2017, the properties of which are common general knowledge as shown in A7.

A2 – A5 do not relate to a method for controlling a charging system. A7 and the information on Model P in A6 is late published.

3.7. Claim 6 (11 marks)

Claim 6 refers back to both claims 4 and 5. A further link is made by requiring that the signal received in a method step of claim 5 is that provided by the detection circuit of claim 4.

An inventive step attack was expected. A6 Model P is the most promising starting point because it also deals with detecting foreign objects when using wireless charging. The lawnmower of A5 is not a vehicle and its processing unit is not involved in charging. A6 teaches away from adapting Model Q for wireless-charging. Therefore alternative attacks starting from A5 or Model Q are not plausible as they would require too many modifications.

3.8. Claim 7 (9 marks)

Claim 7 also refers back to both claims 4 and 5. However, the only further restriction is related to “a price of electric energy” which candidates were expected to understand as being of commercial nature (the examination documents also contain numerous hints in this respect). Claim 7 is therefore a “mixed type invention” comprising technical and non-technical features.

As technology is evolving quickly, this type of claim is becoming more frequent in practice.

As in previous exams, candidates were expected to apply the problem-solution approach according to the Guidelines G-VII, 5.4. Technical and non-technical features were to be separated to permit a proper argumentation with respect to lack of inventive step of the subject matter of the claim.

This allows making an inventive step attack analogous to that for claim 6, since the only additional feature does not make a technical contribution. However, it was equally acceptable to argue, if the candidate considered that the differences make a technical contribution, that implementation details would be an obvious technical solution with the constraint of making price information accessible (Guidelines G VII 5.4 (iii) (c)).

Possible solution – Paper C 2024

1. General (for part 1 of the exam)

Opposition is filed in the name of Paddle Science Laboratories against EP3831740B1 (Annex 1 or A1). The opposition fee has been paid.

The patent is opposed on the grounds of Article 100(a) EPC for lack of novelty and lack of inventive step. The patent is also opposed on the grounds of Article 100(c) EPC. The patent is opposed in its entirety (claims 1 – 3 of part 1 of the exam).

Reference is made to A1 and the further adjoined annexes, labelled A2 to A5.

1.1. Effective Dates

A1 claims priority based on the applications NO20200113 of 14 Mar. 2020 and NO20200355 of 25 May 2020 and is filed on 25 July 2020.

Claim 1 as such contains added subject-matter (see objections under Art 100c below). The originally filed description discloses combinations of subranges to those of claim 1.

Ranges can have partial priorities (G2/98 & G1/15, Guidelines F-VI 1.5).

Claim 1a: The combination of the subranges of CoFeNi from 10 to below 20 wt% and FeCuSiB 30 - 40 wt% is disclosed in §12-13 of A1 and NO20200113. The effective date is 14.03.2020, the priority date of NO20200113.

Claim 1b: The combination of the subranges of CoFeNi 20- 30 wt% and FeCuSiB 20 - 30 wt% is disclosed in claim 2 of A1 and NO20200113. However, the priority claim based on NO20200113 is not valid (see next paragraph). The effective date is the filing date 25.07.2020.

A2 and/or EP19732000.1 (EP3383351) were filed by the same applicant (Mute&Mancer Corp.) and disclose the “same invention” (G2/98), see the novelty objection against claim 1b or 2 below. The filing date is before that of NO20200113 and rights have been derived (publication of A2; priority claim based on EP19732000.1). Therefore NO20200113 is not the first application (Art. 87 (4) EPC) for the subject-matter of claim 1b.

Claim 2 defines the subject-matter already discussed as claim 1b above. The effective date is the filing date 25.07.2020.

Claim 3 is first disclosed upon filing. The effective date is the filing date 25.07.2020.

1.2. Prior art

A2 is a European patent application, published on 29 Jul 2020 (i.e. late), filed on 20 Jan 2020 (i.e. before the earliest priority date for A1). A2 is therefore prior art under Art. 54 (3) EPC for all claims.

EP3383351 (the priority application to A2) was published on 23 July 2020, so it is prior art under Art. 54 (2) EPC for claims whose effective date is the filing date (claims 1b, 2, 3). Furthermore, EP3383351 is a European patent application filed on 18 Jan. 2019, therefore it is prior art under Art. 54 (3) EPC for claims validly claiming priority (claim 1a).

A3 was published on 1 December 2019 and is prior art under Art. 54 (2) EPC for all claims.

A4 was published on 18 July 2020, so it is prior art under Art. 54 (2) EPC for claims whose effective date is the filing date (claims 1b, 2, 3). Furthermore, A4 is a European patent application,

claiming priority from US application US2019/87654321 filed 15 Jan 2019, therefore it is prior art under Art. 54 (3) EPC for claims validly claiming priority (claim 1a).

A5 is an advertising brochure published with the Journal for Xtreme Gardening, edition 1 2020 and published on 13 Dec. 2019. It is prior art under Art. 54 (2) EPC for all claims.

2. Art. 100c

Claim 1 was amended during examination by addition of the expression “the magnetic material comprises amorphous CoFeNi at 10 – 30 % and nanocrystalline FeCuSiB at 20 – 40 % by weight of the magnetic material“.

A1§12 and A1§13 link FeCuSiB in the range of 30-40 wt% to CoFeNi in the specific range of 10 to below 20 wt% to avoid worsening long-term mechanical stability.

A1§14 discloses that CoFeNi between 20 and 30 wt % (endpoints excluded) has to be combined with FeCuSiB in the range of 20-30 wt%, otherwise the composite is not usable because of insufficient long-term stability.

The combination of values outside the aforementioned intervals is not originally disclosed. For example, a combination of FeCuSiB at 35 wt% and CoFeNi at 25 wt% is within the scope of the amendment but goes beyond the content disclosed by A1§12 and A1§13.

Claim 1 as granted contains subject-matter which goes beyond the original disclosure because it cannot be derived directly and unambiguously from the content of A1§12-14. No other part of A1 deals with this subject-matter. Therefore claim 1 contravenes Art. 100 c EPC.

3. Claim 1

3.1. Claim 1a – Lack of inventive step in view of A3+A5

A3 is the closest prior art; it discloses a double-O structure which has the same purpose, reducing sensitivity to misalignment (see A1§7/A3§2).

A3 discloses in terms of claim 1a:

Charging pad comprising:

a first coil and a second coil

(A3§9: 1st and 2nd solenoid; a solenoid is a conductive trace with several concentric windings, see A4§3, so a solenoid is a coil, see A1§5)

both for resonant wireless charging (A3§2)

the first and the second coil arranged side-by-side (A3§9: “next to”) and

a first layer made of a magnetic material (A3§6: blank contains grains; these are from a magnetic alloy (A3§4) and grains are particles (A2§5); thus, a magnetic material is disclosed in view of A1§11)

wherein the first coil and the second coil have been placed on a first surface of the first layer and the first layer has been treated so that the first coil and the second coil have sunk into the first layer

(product by process, see Guidelines F-IV, 4.12.1: the process of A3§7&8 leads to a product having the same structural features: the wire is laid into the liquefied area A3§8 which re-solidifies over the wire; afterwards it is protected from spray water, see A3§10; compare with A1§10: “may [not be] completely covered [...] effectively surrounded”), and the magnetic material comprises nanocrystalline FeCuSiB between at 30 and 40 wt %

(see A3§11: 32 to 38 wt% is within the claimed range; the grains have crystal cells between 150 nm and 300 nm; this corresponds to the definition of nanocrystalline (A2§5, general common knowledge) and amorphous CoFeNi (A3§5: CoFeNi; A3§6: amorphous).

Claim 1a differs from the disclosure of A3 in that a mixture of the two alloys in a particular range is required (A3 is silent on numerical values/range of CoFeNi).

The opposed patent states in A1§13 that the technical effect of this difference is the prevention of oxidation of FeCuSiB. This solves the objective technical problem of reducing corrosion sensitivity (A1§12).

A skilled person would consult A5 when seeking to improve A3. A3§11 mentions that sensitivity to corrosion is an issue for FeCuSiB so a skilled person is prompted to look for solutions. A5 would be considered by a skilled person because it mentions a wireless charging system (A5§2) and mentions protecting against corrosion (see A5§2 or 4).

A5§3 discloses a combination of TP.190, the same polymer as that used in A3, but with nanocrystalline FeCuSiB at 32 wt% and CoFeNi at 16 wt% (2:1 ratio of the remainder of 52%). These values are within the claimed subrange of claim 1a.

A skilled person is prompted to apply this teaching of A5 to A3 in view of the following.

A5§4 states that this composition has been designed specifically to withstand corrosion, i.e. applying this teaching will solve the objective technical problem. The same polymer TP.190 is mentioned in A3 (§§5, 6, 11) and A5§3. A3§5 states that alloys of FeCuSiB and CoFeNi have a melting point higher than that of TP.190, therefore the compound of A5§3 is compatible (cf. A3§4). Finally, A3§10 calls for improvements using “any way to reduce corrosion”.

Thus, claim 1a lacks inventive step (Art. 56 EPC) with respect to a combination of A3 with A5.

3.2. Claim 1b

The scope of the second alternative (claim 1b) is identical to that of claim 2; see the following argumentation.

4. Claim 2

4.1. Lack of novelty (Art. 54 (1), (3) EPC) in view of A2

A2 discloses in terms of claim 2/1b:

Charging pad comprising:

a first coil and a second coil, both for resonant wireless charging, the first and the second coil arranged side-by-side (A2§2) and

a first layer made of a magnetic material wherein the first coil and the second coil have been placed on a first surface of the first layer and the first layer has been treated so that the first coil and the second coil have sunk into the first layer (A2§3)

the magnetic material comprises amorphous CoFeNi at 20 and 30 wt% and nanocrystalline FeCuSiB at 20 - 30% by weight of the magnetic material (A2§4).

Therefore claim 2/1b lacks novelty vis-a-vis A2 with respect to Art. 54 (1), (3) EPC.

4.2. Lack of novelty (Art. 54 (1), (2) EPC) in view of EP3383351

According to the file inspection EP3383351 has the same content as A2; EP3383351 discloses all features of claim 2/1b (see passages cited using A2 above).

Therefore claim 2/1b lacks novelty vis-à-vis EP3383351 with respect to Art. 54 (1), (2) EPC.

5. Claim 3 – Lack of inventive step in view of EP3383351 + A4

The following inventive step attack is based on EP3383351 (EP19732000.1) which is prior art under Art. 54 (2) EPC. For brevity passages are cited from A2 but they are to be understood as referring to EP3383351 because the two documents share the same description, claims and figures.

EP3383351 is the closest prior art because it also relates to a ground charging pad (implied by the feature of magnetisable concrete, cf. A1§17). EP3383351 discloses in terms of claim 3:

Charging pad comprising:

a first coil and a second coil, both for resonant wireless charging, the first and the second coil arranged side-by-side (A2§2), and

a first layer made of magnetisable concrete (A2§6; the stated properties match the definition of magnetizable concrete in A1§15);

the charging pad further comprising a second layer next to the first layer (A2§7).

Claim 3 therefore differs from EP3383351 in:

a second layer made of an electrically conductive material and arranged next to the first layer.

The opposed patent states in A1§19 that the technical effect is the creation of eddy currents which locally cancel the magnetic field. This solves the objective technical problem of reducing leakage of unwanted radiation (A1§20).

A2§8 motivates to look for improvements which reduce leakage of unwanted radiation, so a skilled person is prompted to look elsewhere. A skilled person would consult A4 when seeking to improve EP3383351. A4 also relates to charging pads (A4§1-4, 7, or 8) and addresses the technical problem of reducing leakage of unwanted radiation (A4§5, 6 or 8).

A4§7 teaches the use of a metal sheet next to a solenoid (metal is electrically conductive, see A1§19 and a solenoid is a coil: A4§3 & A1§5).

A skilled person is prompted to use a metal sheet according to A4 for the charging pad of EP3383351 because A4§8 teaches that this reduces leakage radiation, i.e. applying this teaching will solve the objective technical problem. A4§8 also states that the exact configuration of the solenoid or the materials in the charging pad do not influence the effect, so there is no hindrance to apply the teaching of A4 to that of EP3383351.

Thus, claim 3 lacks inventive step (Art. 56 EPC) with respect to a combination of EP3383351 with A4.

6. General (for part 2 of the exam)

In addition to the grounds already presented (see part 1), the patent is opposed on the grounds of Article 100(a) EPC for lack of novelty and lack of inventive step of claims 4 – 7.

Reference is made to A1 and the further adjoined annexes, labelled A2 to A7.

6.1. Effective Dates

Claims 4 and 5 are part of NO20200113. The priority date is 25.5.2020.

Claims 6 and 7 were part of A1 upon filing; the effective date is 25.07.2020.

6.2. Prior art

A6 is the transcript of an oral description (see Guidelines G-IV. 7.3.1 and 7.3.3). A6§1 and/or the image on p. 4 of A6 are evidence that the oral description took place on 30.05.2020 via radio and/or the internet as a podcast (internet dates are accepted at face value, see Guidelines G-IV 7.5.3.3). The content, in particular the information regarding Model P, is prior art under Art. 54 (2) EPC for claims whose effective date is the filing date (part 2: claims 6, 7).

A6 is also evidence that Model Q and the associated details mentioned in A6 were made available to the public by sale between 2015 and 2017 and updates in 2018, i.e. before the filing or priority dates. This is prior art under Art. 54 (2) EPC for all claims.

A7 is prior art under Art. 54 (3) EPC for all claims because it is a European patent application with an earlier filing/priority date than that of A1 and published on 29.07.2020, i.e. after the filing date of A1. A7 is also evidence of prior common general knowledge and the pre-existence of the standard RFC-7511-x in 2017.

7. Claim 4 – Lack of novelty in view of A5

A5 discloses in terms of claim 4:

Charging system for charging a battery (A5§13), the charging system comprising:
a processing unit (A5§7, 12, 13, fig. 2 “microprocessor”; this is within the scope of “processing unit”: A1§32),
a first coil for resonant wireless charging (A5§2 and 12: resonant wireless charging & coils in the charging pads), and
a detection circuit comprising a plurality of second coils for resonant sensing (A5§9, A5§10 disclose an excitation and a probing solenoid; they are tuned to 500 kHz which differs from 85 kHz for resonant wireless charging, so they are for resonant sensing according to A1§24);
said detection circuit being configured to
- create a sensing field with a first of said second coils (A5§9: excitation solenoid generates a sensing field)
- probe said sensing field with a second of said second coils (A5§10: probing solenoid mounted in proximity picks up sensing field),
said detection circuit further being configured to
- obtain a signal representative of the sensing field (A5§10: detection current reacts to any changes in the sensing field),
- provide said signal to the processing unit (sampling circuit measures detection current and forwards it to the microprocessor, see A5§7, §8 or fig. 2)

Therefore claim 4 lacks novelty vis-à-vis A5 with respect to Art. 54 (1), (2) EPC.

8. Claim 5

8.1. Lack of novelty (Art. 54(1), (3) EPC) in view of A7

A7 discloses in terms of claim 5:

Method for controlling a charging system to selectively charge a battery of an electric vehicle (car: A7§4, 6, 7) using a processing unit included in the charging system (A7§7, 9, 10: “microprocessor”),

the method comprising the following steps executed by a processing unit included in the charging system:

- receiving a signal (A7§8: signals indicating the price of electricity)
- deciding, based on the received signal, whether the battery should be charged or not (A7§9: “If-may” implies deciding),
- if it is decided that the battery should not be charged, causing an electrical connection outside the vehicle (A7§10: operates the power switches) to be inactive (A7§9: “interrupt charging”).

Therefore claim 5 lacks novelty vis-à-vis A7 with respect to Art. 54 (1), (3) EPC.

8.2. Lack of inventive step in view of Model Q (A6) + general common knowledge

A6Q (Model Q with updates of 2018) is the closest prior art because it also discloses selective charging of a battery (none of the other documents in time does).

In terms of claim 5 the battery charging system of A6Q comprises the following:

Method for controlling a charging system to selectively charge a battery of an electric vehicle using a processing unit (A6§6 or 7: on-board computer of the car (NB: not the microprocessor in the charging terminal); within the scope of “processing unit“: A1§32) the method comprising the following steps executed by a processing unit included in the charging system:

- receiving a signal (A6§9: battery control system receives the temperature as a signal from the heat sensor)
- deciding, based on the received signal, whether the battery should be charged or not (A6§10 and 11: “checks if the temperature”; “decides”)
- if it is decided that the battery should not be charged, causing an electrical connection the vehicle to be inactive (A6§11: initiating/stopping/continuing charging).

According to A6§6, Model Q adheres to the standard RFC-7511-x. RFC-7511-x implies control of the microprocessor from the on-board computer (A7§6&§7) but A6 does not contain any information on *where* the electrical connection is caused to be inactive.

Therefore claim 5 differs from what is known about A6Q in that the processing unit causes the electrical connection *outside the vehicle* to be inactive.

The opposed patent states in A1§2 that this has the technical effect that the cable between the car and the charging terminal is kept free of electrical tension, thereby solving the technical problem of enhancing safety.

It is common general knowledge that for safety the cable between car and the charging terminal should be kept free from electrical tension, see A7§7 or even A1§2.

Thus, a skilled person aiming to enhance safety of plug-socket charging would use this general common knowledge when implementing what is known about A6Q and cause the power switches (an electrical connection) in the charging terminal, i.e. outside the electric vehicle, to be switched off, i.e. made inactive.

Thus, claim 5 lacks inventive step in view of A6Q and common general knowledge (Art. 56 EPC).

9. Claim 6 – Lack of inventive step in view of A6 (Model P) + A5

Claim 6 refers to the method of claim 5 and the charging unit of claim 4. The features of claim 4 imply detecting foreign objects when using wireless charging, therefore Model P as discussed in A6 (A6P) is the closest prior art because it also deals with detecting foreign objects when using wireless charging (A6§13 or §§16-19).

In terms of the method of claim 5 A6P discloses:

- the method is for controlling a charging system to selectively charge a battery of an electric vehicle (A6§2 or 18: battery & electric car (a car is a vehicle: A2§1)) using a processing unit (A6§15, 16, or 18: “on-board computer”) the method comprising the following steps executed by a processing unit included in the charging system:
 - receiving a signal (A6§15 “at the input [...] available as a signal”),
 - deciding, based on the received signal, whether the battery should be charged or not (A6§13 or A6§16-18)
 - if it is decided that the battery should not be charged, causing an electrical connection outside the vehicle to be inactive (A6§18: power switches; switched off entirely).

A6P discloses in terms of the apparatus claim 4, in addition to the device features already identified herein above, that its charging system comprises:

- a first coil (A6§3: solenoid);
for resonant wireless charging,
a detection circuit, said detection circuit being configured to
 - obtain a signal
 - provide said signal to the processing unit
(A6§15: “the infrared sensor’s is sampled at the input of the on-board computer”) so that (in terms of claim 6)
the received signal is the signal provided to the processing unit by the detection circuit.

NB: the double-O structure mentioned in A6§2 implies resonant wireless charging, see A3§2.

The difference between A6P and claim 6 is therefore, in terms of claim 6:

- said detection circuit comprises a plurality of second coils for resonant sensing,
said detection circuit is configured to
 - create a sensing field with a first of said second coils,
 - probe said sensing field with a second of said second coils
 - obtain a signal representative of the sensing field.

The opposed patent states in A1§26 that the technical effect of this difference is that of reacting to materials having dielectric or conductive properties. This provides a solution to the objective technical problem of enabling reliably detecting whether living bodies and metal objects have entered the charging area (A1§28 or 24).

A6§19-20 indicates that there are situations which are missed if an infrared sensor is used. A skilled person would consult A5 because it also deals with detecting foreign objects (see A5§5-12).

The resonant sensing system of A5 has the differing features, as discussed above in the context of claim 4.

A skilled person is prompted to replace the detection system in A6P with that of A5 because A5§12 teaches that the resonant sensing system enables reliable detection of living bodies and metal objects, i.e. applying this teaching actually solves the objective technical problem. A5§8 suggests ease of deploying RSS (“retrofitted [...] routine maintenance”). Compatibility is suggested by A5§8 (“No changes to the robot’s body required”) and A6§20 (“as long no changes to the car’s body required”).

Thus, the subject-matter of claim 6+5+4 is arrived at without requiring an inventive step (Art. 56 EPC) in view of the combination of A6P and A5.

10. Claim 7 - Lack of inventive step in view of A6 (Model P) + A5 and nontechnical features

Claim 7 comprises technical features and non-technical features; the "mixed type invention" approach applies (Guidelines G-VII, 5.4 or T 641/00 (COMVIK) or G 1/19).

The features which contribute to the technical character are the device features of claim 4, the execution of the method steps of claim 5 by a processing unit and the subsequent alteration of an electrical connection status.

With a focus on these features A6P is the closest prior art because it also deals with wireless charging (A6§2 or §§13-16), the execution of method steps by a processing unit and the subsequent alteration of an electrical connection status (A6§15, 16, 18).

A6P discloses the features of the method claim 5 and a charging system having features of claim 4, see argumentation against claim 6 above. A6P additionally discloses the capability for “receiving all kinds of data” (A6§2).

Claim 7 differs from A6P by the following:

- (a) the aspects of the detection circuit discussed above in the context of claim 6
- (b) the received signal is a signal representative of the price of electric energy to be used for charging the battery.

The technical effect and associated technical problem of difference (a) was already discussed in the context of claim 6 above.

Difference (b) has the effect that charging can be inhibited if the price is higher than a predetermined value (A1§33), thereby reducing costs. This difference is of commercial character, i.e. a business method (cf. A7§9 or comment by user Maurice2222 in A6).

There is no interaction with difference (a) which is related to the detection of foreign objects.

Difference (b) does not constitute inventive subject-matter because it does not make any technical contribution (Guidelines G-II. 3.5.3).

Thus, the subject-matter of claim 7+4+5 lacks inventive step (Art. 56 EPC) in view of the combination of A6P and A5.