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**Datasheet for the decision  
of 9 November 2017**

**Case Number:** T 0018/15 - 3.2.03

**Application Number:** 06425705.8

**Publication Number:** 1914350

**IPC:** E02D3/12

**Language of the proceedings:** EN

**Title of invention:**

A method for homogenizing and stabilising a soil by way of injections

**Patent Proprietor:**

Geosec S.r.l.

**Opponent:**

THUR S.R.L.

**Headword:**

**Relevant legal provisions:**

EPC Art. 100(c), 100(b), 100(a), 54(1), 56, 84, 123(2)

**Keyword:**

Late-filed request - admitted (yes)

Amendments - added subject-matter (no)

Sufficiency of disclosure - after amendment (yes)

Novelty - (yes)

Inventive step - (yes)

**Decisions cited:**

G 0003/14

**Catchword:**



**Beschwerdekammern**  
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Case Number: T 0018/15 - 3.2.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.03**  
**of 9 November 2017**

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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
29 October 2014 concerning maintenance of the  
European Patent No. 1914350 in amended form.**

**Composition of the Board:**

**Chairman** G. Ashley  
**Members:** V. Bouyssy  
S. Fernández de Córdoba

## **Summary of Facts and Submissions**

- I. European patent No 1 914 350 (in the following: "the patent") concerns a method for homogenizing and/or re-homogenizing the physical and chemical characteristics of foundation grounds and/or building areas, to counter differential settlement of buildings.
- II. The patent as a whole was opposed on the grounds of unallowable amendment before grant (Article 100(c) EPC), insufficient disclosure (Article 100(b) EPC), lack of novelty and lack of inventive step (Article 100(a) EPC).
- III. The opposition division decided that the patent as amended on the basis of auxiliary request 3 before it met the requirements of the EPC.
- IV. This interlocutory decision was appealed by the opponent (in the following, "appellant").
- V. With the summons to oral proceedings, the Board sent a communication pursuant to Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA) indicating its preliminary opinion of the case.
- VI. Oral proceedings before the Board were held on 9 November 2017.
- VII. Requests

The appellant requested that the decision under appeal be set aside and the patent be revoked.

The patent proprietor (in the following, "respondent") requested that the decision under appeal be set aside

and the patent be maintained on the basis of the amended claims of the main request filed during the oral proceedings before the Board.

VIII. Claims of the respondent's request

Independent method claim 1 as amended reads as follows (compared with claim 1 as granted, added features are in indicated bold; the feature numbering is introduced by the Board for ease of reference):

A method for homogenising and/or re-homogenising the physical and chemical characteristics of foundation grounds and/or building areas in general to fight all differential sagging of buildings, comprising the steps of:

a) performing first injections into the ground of chemical products, the mentioned injections being realised on the portions of ground (4) that prove to be non-homogeneous and/or non-uniform compared to adjoining areas (3), the latter being homogeneous and uniform, which are not affected by sagging and which are taken as reference areas, so as to change the characteristics of the foregoing portions of ground (4);

characterized in that it includes the steps of

b1) monitoring these foundation grounds and/or building areas in general, at given frequencies and according to fixed patterns before, during and after the mentioned first injections, by using integrated electric tomography systems **addressed to a preliminary interception analysis over the area of the portions of grounds which may cause sagging, said preliminary analysis being followed by said first injections,** and to detect the changes in chemical and physical characteristics

of the treated portions themselves by comparison with those taken as reference portions;

- b2) **performing a subsequent control analysis of the results of said first injections;**
- c) modifying the parameters of said first injections until the chemical and physical characteristics of the treated portions themselves by comparison with those taken as reference portions are made homogeneous and/or uniform as well as matching or similar to those of the mentioned adjoining portions (3);
- d) and possibly performing subsequent targeted injections, whose heights, quantities and specific characteristics, which may also differ from the previous actions, are a function of the effects that have been observed on the treated ground, until the desired homogeneousness and/or uniformity is reached,
- e) **wherein the definition of the position of the injection points, the quantity of chemical products, and the reaction characteristics of these products, are assessed and modified based on the effects recorded during execution in the portions of ground (4) before and during the targeted injections, and in that the conditions of the treated portions are sequentially compared with the conditions that preceded the last injection made, until the desired homogenizing of the treated portions of ground (4) is reached, which compares with the characteristics of the mentioned portions of ground (3) that are not affected by any sagging, taken as reference areas,**
- f) **said method being completed when the values of electric resistivity and conductivity measured in the portions of ground (4) that have undergone the injection treatment turn out to be homogeneous**

**and/or comparable to those of the adjoining portions of ground (3) not affected by any sagging.**

Dependent claims 2 to 5 define preferred embodiments of the method defined in claim 1.

IX. Cited evidence

In the statement setting out the grounds of appeal, the appellant relied among others on the following prior art documents which were filed in the opposition proceedings and are cited in the decision under appeal:

D1: GB 2 119 100 A

D6: Advanced Geosciences, Inc., "Cross Borehole Electrical Resistivity Tomography (ERT) Measurements", 18 September 2003

D9: Barocelli, F. et al., "La Chiesa di San Vitale: il monumento ritrovato", Edizioni Gabriele Mazzotta, 2005, front cover, bibliographic data, pages 59 to 72, table of contents, last page and back cover

D9a: English translation of pages 59 to 72 of D9

D12: Whitlow, R., "Basic Soil Mechanics", Prentice Hall 4th edition, 2000, front cover, spine, back cover, pages 402 to 407

X. The arguments of the parties, insofar as relevant for the present decision, can be summarised as follows:

(a) Admission of the respondent's request

The current request was filed in the oral proceedings before the Board.

The appellant requested that the request be held inadmissible because it was filed too late and because claim 1 as amended could not overcome all of the appellant's objections under Articles 100(c), 100(b), 123(2) and 84 EPC.

The respondent argued that the new request was filed in direct reaction to the Board's preliminary opinion in its communication under Article 15(1) RPBA accompanying the summons to oral proceedings. The request represented an attempt to overcome all objections raised in this communication. Amended claim 1 corresponded to a combination of claims 1 to 3 of the main request filed with the reply to the appeal grounds. This amendment did not give rise to any new or complex issues.

(b) Article 100(c) EPC

Features (e) and (f), which have been added to claim 1, were taken from claims 2 and 3 as granted. The appellant submitted that there was no clear basis for these features in the application as filed. The respondent argued that basis could be found in claims 2 and 3 as originally filed.

(c) Article 84 EPC

Feature (b2) has been introduced between features (b1) and (c) of claim 1. The appellant argued that this amendment introduced non-compliance with Article 84 EPC because the link between feature (b2) and features (b1) and (c) was unclear.

The respondent explained that it was perfectly clear from the claim language that feature (b2) should be



performed after having completed the first injections as defined in features (b1) and (c).

(d) Article 100(b) EPC

Appellant's case:

The skilled person would be unable to put into practice feature (c) of claim 1, which required that the injection parameters were modified until "the chemical and physical characteristics" of the treated portions of the soil were "homogeneous and/or uniform as well as matching or similar" to those of the reference portions.

It was not clear from the patent, let alone from claim 1, how the term "the chemical and physical characteristics" should be construed. It was apparent that, by injecting chemical products into the treated portions, their chemical properties could never be matched or made similar to those of the undisturbed reference portions. The skilled person had no reason for ignoring the clear and unambiguous language of feature (c) and reading into it that the control parameter was the electrical resistivity of the soil, rather than its "chemical and physical characteristics".

Moreover, electrical resistivity as mentioned in features (b1) and (f) was not a suitable parameter to control the injections. In clayey soils where settlement was caused by dryness (see e.g. D12), the injections would hardly increase the resistivity. In soils where the presence of water or voids was the cause of settlement, the effect of injections on resistivity was unpredictable and uncontrollable.

At any rate, the expression "homogeneous and/or uniform as well as matching or similar" as used in feature (c) was unclear and the degree to which the resistivity should be made homogeneous, uniform, matching and/or similar was entirely undefined in the patent.

Respondent's case:

In the context of claim 1, it was clear from features (b1), (c) and (f) of claim 1 that the parameters of the first injections were actively modified, while the injections were in progress, until the resistivity distribution obtained by electrical resistivity tomography (in the following, "ERT") in the treated portions of the soil and in the adjoining undisturbed portions was homogenised, i.e. made uniform, to a significant degree. The patent provided the necessary guidance for the successful implementation of this feature.

(e) Article 100(a) EPC - Novelty

The appellant argued that the subject-matter of claim 1 lacked novelty over the ground consolidation method by injection as disclosed in D9 (see figures 2 and 9 to 12 and paragraphs 1.2.1 and 1.2.3 of D9a).

The respondent submitted that D9 failed to disclose at least the following features of claim 1:

- that adjoining, unsettled portions of the ground were taken as reference portions;
- that, during the first injections, the resistivity in the treated portions of the ground was measured by ERT;

- that the measured resistivity was compared with that in the reference portions; and
- that the parameters of the first injections were modified until the resistivity in the treated soil portions was matching or similar to that in the reference portions.

(f) Article 100(a) EPC - Inventive step

The appellant argued that, when starting from the consolidation method of D9 as closest prior art and seeking to improve its reliability, the claimed subject-matter was rendered obvious by the teaching of D1. In fact, D1 essentially taught that the reliability of the injection treatment could be improved, while it was in progress, by measuring the electrical resistance of the treated soil portion, comparing the measured resistance with that of a soil sample and, based on this comparison, modifying the injection parameters. The soil sample formed reference portions in the broad sense of claim 1. Even though D1 taught to take the sample from the soil and measure the resistance with electrodes, this would not deter the skilled person from combining the teachings of D9 and D1. He would then inevitably arrive at the claimed solution.

The respondent contended that D1 contained no information which would point towards the claimed solution of the problem of improving the reliability of the consolidation method as disclosed in D9. Firstly, D1 did not address this problem, but rather that of the injected chemical product leaking or escaping in the treated soil portion. Secondly, since D1 taught to measure the electrical resistance of the treated portion and to compare it with that of an already treated sample taken out from the site, it would lead

the skilled person away from non-invasive ERT measurements to control the injections, as required in claim 1. Knowledge of the soil resistance was not sufficient to assess the soil resistivity to a reasonable degree of accuracy.

### **Reasons for the Decision**

1. Admission of the respondent's request
  - 1.1 The respondent filed the current request in the oral proceedings before the Board, allegedly in reaction to the Board's communication under Article 15(1) RPBA in preparation of the oral proceedings.
  - 1.2 Although the request was filed very late, and the communication had not raised any new issues, the Board exercised its discretion to admit this request into the proceedings for the following reasons (Article 13(1) RPBA):
  - 1.3 Claim 1 corresponds to a combination of claims 1, 2 and 3 of the main request filed with the respondent's reply to the appeal grounds.
  - 1.4 The amendment *prima facie* overcame all of the appellant's objections raised under Articles 100(c), 100(b), 123(2) and 84 EPC, and furthermore did not give rise to any new or complex issues that could not be dealt with without adjournment of the oral proceedings.
  - 1.5 In fact, by way of the amendment, claim 1 has been limited to the particular embodiment of the invention wherein injections are carried out until sufficient homogeneity is achieved in the electrical resistivity of the soil. Throughout the opposition and appeal

proceedings, the respondent consistently argued that this particular embodiment was capable of being realised, without undue burden, on the basis of the patent disclosure. It was also noted that, in the opposition and appeal proceedings, the appellant had already made submissions directed at the subject-matter of claim 3 as granted, which now formed the basis of the amendments. In summary, the amendment did not compromise the procedural economy.

2. Amendments - Article 123 EPC

2.1 Claim 1 as amended differs from claim 1 as granted by the added limitations:

- that the integrated electric tomography systems are "addressed to a preliminary interception analysis over the area of the portions of grounds which may cause sagging, said preliminary analysis being followed by said first injections" (see feature (b1) of claim 1);
- that the method comprises the step of "performing a subsequent control analysis of the results of said first injections" (feature (b2));
- that "the definition of the position of the injection points, the quantity of chemical products, and the reaction characteristics of these products, are assessed and modified based on the effects recorded during execution in the portions of ground (4) before and during the targeted injections, and in that the conditions of the treated portions are sequentially compared with the conditions that preceded the last injection made, until the desired homogenizing of the treated portions of ground (4) is reached, which compares with the characteristics of the mentioned portions

- of ground (3) that are not affected by any sagging, taken as reference areas" (feature (e)); and
- that the method is "completed when the values of electric resistivity and conductivity measured in the portions of ground (4) that have undergone the injection treatment turn out to be homogeneous and/or comparable to those of the adjoining portions of ground (3) not affected by any sagging (feature (f)).

2.2 These amendments are supported by the information in the application documents as originally filed. Support for the first and second amendments can be found in lines 25 to 28 and lines 31 and 32 of claim 1 of the application as published. The third amendment is based on the teaching in claim 2 and at column 5, lines 15 to 24 of the application as published. Support for the fourth amendment can be found in claim 3 and column 5, lines 24 to 32 of the application as published.

2.3 In conclusion, the amendments to claim 1 meet the requirements of Article 123(2) and (3) EPC.

2.4 In the oral proceedings, the appellant indicated that it had no objection under Article 123 EPC.

3. Article 100(c) EPC

3.1 The appellant argued that there was no basis in the application as filed for added features (e) and (f) from claims 2 and 3 as granted. However, as indicated under point 2.2 above, these features are supported by claims 2 and 3 as originally filed.

3.2 In its written and oral submissions against claim 1 found allowable in the appealed decision, the appellant

contended that feature (c) introduced subject-matter that extended beyond the disclosure in the application documents as originally filed. The appellant argued essentially that it was consistently taught in the application as published (see paragraphs 16 and 18 and steps g) and i) in paragraph 26) that the injection parameters should be actively modified based on the homogenisation of the chemical and physical characteristics of the treated portions already achieved before and during the injections, by comparing the actual chemical and physical characteristics of the treated portions with those of the reference portions as well as those of the treated portions before the injections. Since features (b1) and (c) of claim 1 defined this requirement only in part, the claim introduced added subject-matter.

- 3.3 This objection is overcome by claim 1 as amended. Indeed, it is clear from the wording of added feature (e) that the modification of the injection parameters is based on the effects achieved in the treated portions, during the injections, as compared with the conditions already achieved before and during the injections.
4. Article 84 EPC
- 4.1 The Board is not persuaded by the appellant's arguments that the amendments to claim 1 introduce non-compliance with Article 84 EPC.
- 4.2 Claim 1 differs from claim 1 as granted essentially in that feature (b1) has been amended and in that features (b2), (e) and (f) have been incorporated in it (see point 2.1 above).

4.3 The appellant contended that the amendment in feature (b1) of claim 1 introduced a lack of clarity because it was not clear to what the passage "and to detect the changes in chemical and physical characteristics of the treated portions themselves by comparison with those taken as reference portions" referred to. However, as argued by the respondent, on a normal reading of feature (b1) it is clear that this passage defines the integrated electric tomography systems: they are "addressed to a preliminary interception analysis ... and to detect the changes in chemical and physical characteristics of the treated portions themselves by comparison with those taken as reference portions" (emphasis added by the Board).

4.4 The appellant submitted that the control analysis required by added feature (b2) was not clearly defined and that it was unclear whether, and how, the control analysis was linked to the steps of detecting changes in feature (b1) and of modifying injection parameters in feature (c). The Board takes the view that the language of feature (b2) imparts a clear, albeit broad, teaching to a skilled reader. Feature (b2) defines the step of "performing a subsequent control analysis of the results of said first injections". The term "subsequent" makes it clear that this control analysis must be performed after having completed the first injections, which are defined in features (a), (b1) and (c). The mere fact that, in claim 1, feature (b2) has been placed after feature (b1) and before feature (c), which defines the step of modifying the parameters of the first injections while they are being performed, does not introduce a lack of clarity. In fact, as argued by the respondent, the claimed method is not restricted to a specific sequence of steps (b2) and (c).



4.5 In the oral proceedings, the appellant raised an objection under Article 84 EPC against the wording of feature (f) of claim 1. However, this objection does not arise from the amendments made in claim 1, since this feature was already present in claim 3 as granted. Hence, this objection is inadmissible (G 3/14, OJ 2015, A102).

5. Article 100(b) EPC

5.1 The Board is not persuaded by the appellant's arguments that the patent does not disclose the invention as defined in claim 1 in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

5.2 In the light of the technical terms used in claim 1, it is aimed at a reader having knowledge in the field of geotechnical engineering, in particular in the consolidation and stabilisation of settled soils by means of injections to restore their load-bearing capacity, including general knowledge of the geophysical technique ERT. This defines the level of skill of the fictitious "skilled person" which must be considered when assessing sufficiency of disclosure.

5.3 ERT is a well-known non-invasive technique for determining the spatial distribution of electrical resistivity in the soil from measurements made on the ground surface (see e.g. D6, D9). The resistivity is a measure of how much the soil resists the flow of electricity. It is a complicated function of a number of chemical and physical properties of the soil, including moisture content, mineral composition, porosity and temperature (see e.g. D6, page 7 or D9a,

page 3, left column, paragraph 2). They affect the resistivity in different ways and to different extents. However, the resistivity is known to have a high correlation to the presence of water and voids in the soil, which are the most common cause of settlement. The skilled person knows that, when seeking to counter such a settlement by injecting expanding resin in the soil, the expansion of the resin eventually results in the displacement of interstitial water as well as the filling of voids, and thus leads to significant changes in the resistivity of the soil (see e.g. D9, figures 10 and 12). Thus, he understands that resistivity can be used as a parameter for monitoring the effect of injections.

- 5.4 Feature (c) of claim 1 requires that the parameters of the (first) injections be modified "until the chemical and physical characteristics of the treated portions themselves by comparison with those taken as reference portions are made homogeneous and/or uniform as well as matching or similar to those of the mentioned adjoining portions".
- 5.5 This feature must be read in the context of claim 1, in particular in combination with features (b1) and (f). Having the above mentioned common general knowledge in mind, it is then clear to the skilled person that, in the method as claimed, ERT is used to determine the resistivity distribution in the treated portions of the ground before, during and after the first injections, and thus ERT indirectly detects changes in the properties of the soil (features (b1) and (f)), and that feature (c) must be construed in the sense that the parameters of the first injections are actively modified until the initial inhomogeneity of the

resistivity distribution is reduced to a desired degree.

- 5.6 This understanding is confirmed by the teaching in the description of the patent (see e.g. paragraphs 17 and 18 in the patent specification). A preferred embodiment with specific details of the claimed method is disclosed in the description (paragraphs 26 and 27), wherein expanding polyurethane resins are injected into settled portions of the soil and 3D-ERT results are used to control the effect of the injections on resistivity.
- 5.7 In the absence of any serious doubts substantiated by verifiable facts, there is no reason not to believe that the skilled person, following the guidance provided in the patent and using common general knowledge, would be able to put this feature into practice. In fact, the teaching of D9 confirms that the selection of adequate injection parameters to achieve an appropriate degree of homogeneity of the resistivity is a matter of routine for the skilled person. In this respect, it is apparent that he would not compare discrete values of the resistivity in the treated and the undisturbed portions, as argued by the appellant, but rather compare the resistivity distributions obtained by ERT in these portions.
- 5.8 The patent is silent as to the exact degree to which resistivity must be homogenised, i.e. made uniform, when carrying out the method as defined in claim 1. Even though this may be relevant when determining the scope of protection conferred by the claim, it is immaterial to the sufficiency of disclosure. As argued by the respondent, the skilled person would have no difficulty to set the required degree of homogeneity so

that the achieved consolidation of the settled soil is acceptable. This can be considered as the result of exercising normal engineering ability and skill.

5.9 The appellant argued that, in clayey soils where differential settlement is caused by dryness, the resistivity could not be used to control the efficiency of the consolidation treatment by injections. However, it is clear that the claimed method is deemed to be used for consolidating soils where settlement is due to the presence of water or voids, so that the resistivity of the soil is a suitable parameter for controlling the efficiency of the injections. In practice, before any injections are performed, the skilled person will carry out a preliminary ERT analysis to detect whether or not resistivity anomalies are arising from voids or water in the soil.

6. Article 100(a) EPC - Novelty

6.1 D9 discloses how the settled foundation of the baroque church of San Vitale in Parma, Italy, was consolidated by means of three injections of expanding resin on 13 June 2003, 3 July 2003 and 16 July 2003, whereby the effect of the injections on the soil was monitored by 3D-ERT measurements carried out before, during and after the execution of the works (see figures 2 and 9 to 12 of D9 and paragraphs 1.2.1 and 1.2.3 of D9a). This ground consolidation method amounts to a method for homogenising the properties of a foundation ground in the sense of claim 1.

6.2 The parties dispute whether or not D9 discloses the following features of claim 1:

- that a number of relatively homogeneous and uniform ground portions, which are adjoining the treated

portions of the ground and are not affected by sagging, i.e. unsettled, are taken as reference portions (see feature (a) of claim 1);

- that, during the (first) injections, the resistivity in the treated portions is measured by ERT and the measured resistivity is compared with that in the reference portions (see feature (b1));
- that the parameters of the (first) injections are modified until the resistivity in the treated portions is matching or similar to that in the reference portions (features (c) and (f)).

6.3 It is stated in D9 (paragraphs 1.2 and 1.2.1) that, by means of a preliminary 3D-ERT analysis before the injections, a gravel layer with high resistivity was identified at a depth of about 10 meters (see yellow region in figure 5). However, it cannot be derived from D9 that this layer was not affected by settlement, let alone that it was used to define reference portions in the sense of claim 1 when assessing the effect of the (first) injections on resistivity.

6.4 Moreover, even though it follows from figure 9 of D9 that ERT was carried out in the treated portions during the first and second injections on 13 June 2003 and 3 July 2003 (in D9a see also paragraph 1.2.1, in particular the statement that the injection treatment can be monitored by ERT "in real time ... pre, during and post interventions in foundations", and paragraph 1.2.3 which mentions "continuous monitoring, work-in progress, of resistivity changes"), it cannot be derived from D9 that the measured resistivity distribution was used to actively modify the parameters of the injections on 13 June 2003 or 3 July 2003, while they were in progress, as required by feature (c) of claim 1.

6.5 In the statement of grounds of appeal, the appellant alleged that the parameters of the injections on 3 July 2003 were modified on 16 July 2003 based on ERT carried out on 3 July 2003. This, however, would anticipate the method step defined in feature (d) of claim 1, but not that of feature (c).

6.6 The consolidation method as defined in claim 1 thus differs from that disclosed in D9 by the features:

- that a number of relatively homogeneous and uniform soil portions, which are adjoining the treated portions and are unsettled, are taken as reference portions;
- that, during the (first) injections, the resistivity measured by ERT in the treated portions is compared with that in the reference portions;
- that the parameters of the (first) injections are modified until the resistivity in the treated portions is matching or similar to that in the reference portions.

7. Article 100(a) EPC - Inventive step

7.1 The parties agree that the ground consolidation method as disclosed in D9 forms a realistic starting point for the assessment of inventive step. The Board shares this view.

7.2 The afore mentioned distinguishing features have the effect that the parameters of the injections are actively modified while the injections are in progress, and that the modifications are based on the actual changes in the resistivity distribution in the treated portions compared to that in the reference portions.

- 7.3 Thus, starting from the ground consolidation method as described in D9, the objective technical problem to be solved is how to improve its efficiency and reliability.
- 7.4 The claimed solution to this problem is not part of common general knowledge of the skilled person and is neither disclosed nor suggested in the cited prior art.
- 7.5 The Board is not persuaded by the appellant's argument that the distinguishing features inevitably result from the teaching of D1, for the reasons submitted by the respondent.
- 7.6 Firstly, even though D1 is generally concerned with the efficiency of a consolidation method wherein a stabilising chemical is injected into settled soil, it does not address the problem to be solved. Instead, it aims to overcome the problem that the injected chemical may leak or escape from the treated portion of the soil and thus may not solidify where it is intended (page 1, lines 18 to 57). Thus, when trying to solve the objective problem, the skilled person would disregard the teaching of D1.
- 7.7 Secondly, D1 contains no information which would point towards the claimed solution of the problem. It teaches that the efficiency of the injection treatment can be actively controlled, while the injection is in progress, by measuring the electrical resistance of the treated soil portion (page 1, lines 58 to 62), comparing the measured resistance with that of a sample which has previously been taken from the soil and treated with the same chemical (page 1, lines 62 to 65; example 5) and adjusting an injection parameter, namely the flow rate of chemical or the amount of chemical,

based on the measured resistance (page 2, lines 9 and 10). Contrary to the appellant's view, the treated soil sample which serves as reference does not form reference portions in the sense of claim 1. Indeed, in the context of the claim, it is apparent that the reference portions are undisturbed portions of the soil and that the efficiency of the injection treatment is controlled in a non-invasive manner by ERT.

Furthermore, and no less important, D1 teaches that electrical resistance (in ohms) be measured, not electrical resistivity (in ohm-meters). Thus, D1 would lead the skilled person away from non-invasive ERT measurements for controlling the injections. Therefore, even if the skilled person were to consider combining the teaching of D9 with that of D1, he would not arrive at the claimed solution in an obvious manner.

7.8 In conclusion, when starting from D9, the subject-matter of claim 1 involves an inventive step in the sense of Article 56 EPC.

8. For the reasons set out above, neither the grounds for opposition raised by the appellant nor the objections raised by the appellant under Article 84 EPC prejudice the maintenance of the patent as amended.

## **Order**

### **For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent as amended in the following version:



- claims 1 to 5 of the main request filed in the oral proceedings before the Board;
- a description to be adapted; and
- figures 1 and 2 of the patent specification.

The Registrar:

The Chairman:



C. Spira

G. Ashley

Decision electronically authenticated