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Datasheet for the decision of 20 January 2026

Case Number: T 1205/24 - 3.5.04

Application Number: 18169912.5

Publication Number: 3480780

IPC: G06T3/00, G06T7/30

Language of the proceedings: EN

Title of invention:
DETERMINING A TRANSFORMATION BETWEEN COORDINATE FRAMES OF SETS OF IMAGE DATA

Applicant:
Siemens Healthineers AG

Relevant legal provisions:
EPC Art. 54

Keyword:
Sole request - novelty (no)

Decisions cited:
G 0001/24, T 0356/23

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Case Number: T 1205/24 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 20 January 2026

Appellant: (Applicant)	Siemens Healthineers AG Siemensstraße 3 91301 Forchheim (DE)
Representative:	Siemens Healthineers Patent Attorneys Postfach 22 16 34 80506 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 19 July 2024 refusing European patent application No. 18169912.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	B. Willems
Members:	F. Sanahuja
	G. Decker

Summary of Facts and Submissions

I. The appeal is against the examining division's decision to refuse European patent application No. 18 169 912.5.

II. The prior-art documents cited in the decision under appeal included:

D1 EP 3 246 875 A2
D2 US 2017/0217102 A1
D3 EP 3 121 789 A1
D4 R. Liao et al., "*An Artificial Agent for Robust Image Registration*", Arxiv.org, 30 November 2016, doi: 10.48550/arXiv.1611.10336

III. The application was refused on the following grounds:

- The sole request did not meet the requirements of Articles 83 and 84 EPC.

- The subject-matter of claims 1 and 16 of the sole request was not new over the disclosure of document D1 (Article 54(1) and (3) EPC).

- The subject-matter of claims 1 and 16 of the sole request was not new over the disclosure of each of documents D2 to D4 (Article 54(1) and (2) EPC).

IV. The applicant (appellant) filed notice of appeal. With its statement of grounds of appeal, the appellant maintained the sole request that had formed the basis of the decision under appeal and provided arguments as to why the examining division's findings were not correct.

V. The appellant was summoned to oral proceedings. In a communication under Article 15(1) RPBA, the board gave, *inter alia*, the preliminary opinion that the subject-matter of claim 1 of the sole request lacked novelty over the disclosure of document D2 (Article 54 EPC).

VI. Oral proceedings took place as scheduled.

The appellant's final requests were that the decision under appeal be set aside and that a patent be granted on the basis of the claims according to the sole request that had formed the basis of the decision under appeal.

VII. Claim 1 of the sole request reads as follows:

"*A method of determining a transformation between coordinate frames of sets of image data, the method comprising:*

receiving a model (302) of a structure extracted from first source image data, the first source image data being generated according to a first imaging modality and having a first data format, wherein the model (302) has a second data format, different from the first data format; and

determining, using an intelligent agent (112), a transformation between coordinate frames of the model (302) and first target image data (304), the first target image data (304) being generated according to a second imaging modality different to the first imaging modality."

Reasons for the Decision

1. *The invention*

The invention relates to a method of determining, using an intelligent agent, a transformation between coordinate frames of a model generated from image data of a first imaging modality and image data of a different modality.

2. *Claim interpretation*

2.1 The description and drawings must always be consulted to interpret the claims when assessing the patentability of an invention under Articles 52 to 57 EPC (see G 1/24, OJ EPA 2025, 60, Order).

2.2 Claim 1 specifies "*determining, using an intelligent agent (112), a transformation between coordinate frames of the model (302) and first target image data (304)*".

2.2.1 The board interprets this step of claim 1 more broadly than submitted by the appellant.

2.2.2 The appellant argued that the step of determining the transformation between coordinate frames (registration) unambiguously defined an intelligent agent registering the model and image data. It contended that claim 1 clearly specified the inputs to the intelligent agent, i.e. the model and first target image data. Since the claimed determination did not include intermediate steps, such as extracting features from the model or the first target image data, the claim had to be construed as specifying that the model and the first target image data were input to the intelligent agent,

and the intelligent agent calculated the translational and rotational parameters of the transformation.

2.2.3 The board is not convinced by these arguments.

The determining step specifies that an intelligent agent is used for determining the transformation between coordinate frames. Therefore, it merely requires that an intelligent agent is used as part of the registration process. In particular, it does not specify which data is compared for registration, that the intelligent agent determines the parameters of the transformation, or that the intelligent agent necessarily uses, or even has access to, both the model and first target image data for determining the transformation between coordinate frames.

Registration of a model to an image (be it two-dimensional or three-dimensional) may include a series of sub-steps. For example, a first sub-step may obtain a derived model or extract features from the first target image data and a second sub-step may compare the model with the obtained model or extracted features. The claimed determining step encompasses the intelligent agent merely being used in one of these sub-steps.

The description discloses an embodiment for determining a transformation between coordinate frames of sets of image data. In this embodiment, the intelligent agent receives a two-dimensional projection of the model and the first target image data and, through an iterative process, determines a transformation between the model and the first target image data (see, for example, page 15, line 33 to page 18, line 6, corresponding to the description of Figure 5); however, this is a

specific embodiment of the more general teaching of using an intelligent agent to determine the transformation (see page 3, lines 24 to 35). The board agrees with the case law established following G 1/24, according to which consulting the description does not mean that limiting features which arise solely from specific embodiments in the description can restrict the subject-matter claimed in a more general manner (see the decisions cited e.g. in T 356/23, point 4 of the Reasons).

2.2.4 Hence, the board concludes that the claimed determining step encompasses using an intelligent agent in a sub-step of the process for determining a transformation between coordinate frames of a model and first target image data. This sub-step need not be the calculation of the rotational and translational parameters of the transformation.

3. *Sole request - novelty over document D2 (Article 54(1) and (2) EPC)*

3.1 Document D2 discloses various methods for registering and fusing, using machine learning, medical images from multiple medical imaging modalities into a single coordinate system (see paragraph [0021]).

In one example, segmentation is performed on image data acquired using a first imaging modality resulting in a segmented organ mesh. A posterior probability map for the organ is extracted by applying a trained discriminative classifier - an intelligent agent - to an image acquired using a second imaging modality. The segmented organ mesh and the posterior probability map are then registered and fused (see paragraph [0022]).

3.2 Although the appellant argued that segmentation *per se* did not result in the extraction of a model, it did not contest that the segmented organ mesh referred to in document D2 could be equated to the claimed model; however, it argued that document D2 did not disclose registering a model to target image data. It instead disclosed registration based on a segmented mesh and a posterior probability map. The posterior probability map was not image data.

3.3 The board is not persuaded by these arguments.

3.3.1 The process of determining a transformation between coordinate frames of a model from source image data and target image data using an intelligent agent in claim 1 may encompass a series of sub-steps (see points 2.2.3 and 2.2.4 above). These sub-steps may include, for example, extracting a model (mesh) from image data acquired using a first imaging modality, using the intelligent agent to calculate a posterior probability map for image data acquired using a second imaging modality and registering the model (mesh) with the posterior probability map.

3.3.2 Claim 1 does not specify in which sub-step(s) the intelligent agent is involved, nor does claim 1 specify which data is compared for registration (see also point 2.2.3 above). Accordingly, the nature of the processing performed by the intelligent agent or the data compared for registration cannot distinguish the determination of the transformation between coordinate frames specified in claim 1 from the registration disclosed in document D2.

3.3.3 Registering the model (mesh) with the posterior probability map naturally results in registering the

model (mesh) with the image data from which the posterior probability map was extracted (the image data acquired using a second imaging modality). Both in claim 1 and in the example from document D2 referred to in point 3.1 above, determining the transformation merely requires that points of a model extracted from first image data be aligned with points in the second image data. Hence, document D2 discloses determining the claimed transformation between the model and the image data.

3.4 In view of the above, the subject-matter of claim 1 of the sole request lacks novelty over the disclosure of document D2 (Article 54(1) and (2) EPC).

4. *Conclusion*

Since the subject-matter of claim 1 of the sole request lacks novelty, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

K. Boelicke B. Willems

Decision electronically authenticated