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Datasheet for the decision of 28 August 2020

Case Number: T 0758/18 - 3.5.05

Application Number: 13833994.0

Publication Number: 2891946

IPC: G06F3/00, G06F17/00

Language of the proceedings: EN

Title of invention:
INTERACTION METHOD AND INTERACTION DEVICE FOR INTEGRATING AUGMENTED REALITY TECHNOLOGY AND BULK DATA

Applicant:
INHA University Research and Business Foundation

Headword:
Augmented reality using KBS database/INHA

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (no)

Decisions cited:

Europäisches Patentamt
European Patent Office
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Beschwerdekammern

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Case Number: T 0758/18 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 28 August 2020

Appellant: (Applicant)	INHA University Research and Business Foundation Yonghyeon-Dong Nam-Gu Incheon 402-751 (KR)
Representative:	Barker Brettell LLP Medina Chambers Town Quay Southampton SO14 2AQ (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 10 October 2017 refusing European patent application No. 13833994.0 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	A. Ritzka
Members:	P. Cretaine
	F. Blumer

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division, posted on 10 October 2017, refusing European patent application No. 13833994.0. The application was refused for lack of clarity (Article 84 EPC) and lack of inventive step (Article 56 EPC) of a main request and first and second auxiliary requests over the disclosure of

D1: US 2009/322671 in combination with

D3: KR 101 161 241.

II. Notice of appeal was received on 20 December 2017 and the appeal fee was paid on the same day. The statement setting out the grounds of appeal was received on 12 February 2018. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of a main request, a first auxiliary request, or a second auxiliary request, all requests submitted with the statement setting out the grounds of appeal. It also requested oral proceedings as an auxiliary measure.

III. A summons to oral proceedings was issued on 8 June 2020. In a communication sent on 22 June 2020 the board gave its preliminary opinion on the case, namely that the main request and the first and second auxiliary requests did not meet the requirements of Article 56 EPC in view of D1 in combination with D3.

IV. With a letter of response dated 28 July 2020, the appellant provided arguments in respect of inventive step and requested that oral proceedings be held by

video conference.

V. Oral proceedings were held on 28 August 2020 by video conference. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request, the first auxiliary request or the second auxiliary request, all requests as filed with the statement setting out the grounds of appeal of 12 February 2018.

VI. Claim 1 of the main request reads as follows:

"A method for connecting an augmented reality system based on computer vision technology to a Knowledge Base System, KBS, storing mass data relating to a virtual object, comprising:
providing for a defined action of user to provide an interaction between a user and a virtual object displayed on an augmented reality screen of the augmented reality system;
providing a connection between the virtual object and the action of the user defined for the interaction; and
providing a communication protocol for communicating between the augmented reality system and the Knowledge Base System in both directions, the communication protocol including a structure and the communication protocol defining a transfer of an event issued in the augmented reality system by the defined action of the user for providing interaction to the KBS and a transfer of a response to the event to the augmented reality system, wherein the augmented reality system constitutes a client and the KBS constitutes a server in relation to the transfer of an event and the transfer of a response using the communication protocol."

Claim 1 of the first auxiliary request adds at the end of claim 1 of the main request the wording ", and the KBS and the augmented reality system are provided by different platforms".

Claim 1 of the second auxiliary request adds at the end of claim 1 of the first auxiliary request the wording ", and the augmented reality system comprises an engine to recognize, track and synthesize objects, and the KBS stores virtual object information"

Each of the main request, the first auxiliary request and the second auxiliary request comprises further independent claims directed to a corresponding system (claim 5) and a corresponding computer-readable media (claim 9).

Reasons for the Decision

1. The appeal is admissible (see point II above).

2. Prior art

2.1 D1 discloses an augmented reality (AR) system based on computer vision technology, comprising a touch screen display and a database storing graphical images or textual information about virtual objects to be augmented (see the abstract and paragraph [0032]). The user is able to view an augmented virtual object and to interact with it through an action on the touch display (see paragraphs [0033] to [0035], [0044] and [0045]).

D3 discloses the use of a Knowledge Based System, KBS, to store data, including video images, relating to virtual objects needed by an augmented reality system (see paragraphs [0004] and [0013]].

3. Article 56 EPC

3.1 Main request

D1 represents the closest prior art to the subject-matter of claim 1. In D1, data relating to the virtual objects is stored in a database which is internal to the AR system. The skilled person understands from the description of the present application that the Knowledge Based System, KBS, database in claim 1 is a database which is not integrated to the AR system, as the database in D1, but is remote.

The differences between the subject-matter of claim 1 and the disclosure of D1 are thus in substance that:
- the database is a remote KBS database, and
- the AR system and the KBS database are communicating through a communication protocol, whereby the AR system constitutes a client and the KBS database constitutes a server.

The technical effect of these distinguishing features is that the functionalities of a KBS, in particular with respect to the treatment of a very large amount of data, are provided to the AR system for the treatment of data relating to the virtual objects. The objective technical problem can thus be formulated as how to improve the AR system of D1 so that it can deal with much larger amount of stored data relating to the virtual objects.

The skilled person, starting from D1 and trying to solve the above-mentioned problem, would consult D3 which relates to augmented reality systems. The skilled person learns from D3 that a KBS system can be used for supporting an AR system and is moreover aware that a KBS database can handle large amounts of data in an intelligent fashion. The skilled person would thus consider to use a KBS in the AR system of D1. However, since the device of D1 is a handheld device, it is obvious for the skilled person to implement the KBS database as an external server database.

The appellant argued that D1 was teaching against having a separate database since it was directed to overcome the inconvenience of a multi-component/multi-device AR systems by integrating a human interface and an AR computing system in a hand-held device, thus disclosing a self-sufficient stand-alone device with a self-conceived integrated image recognition system. The skilled person would thus not combine D1 with D3. The appellant relied in particular on paragraph [0007] of D1. However, in the board's view, emphasis is put on the user interface in D1 in making the AR system more user friendly by integrating the camera, the display and the user input device of the AR system in a hand-held device. The board is thus of the opinion that the skilled person would not be prevented by the overall teaching of D1 to consider implementing an external implementation of the AR database without modifying the human interface.

The appellant further argued that the KBS system of D3 was not related to image recognition and visual matching. However, the board notes that paragraphs [0004] and [0013] of D3 clearly disclose that the KBS

system of D3 is used for an AR system which implies image recognition capabilities.

The appellant further argued that the implementation of the AR database as an external KBS database would need to define a precise communication protocol and interaction method between the AR system and the KBS database. In the board's opinion, claim 1 does not define a communication protocol as such but only specifies that a communication protocol exists between the AR system as client and the KBS database as server. However, it belongs to the common general knowledge of the skilled person that the exchange of data between a client and a server is based on a communication protocol which has to be defined in advance.

For these reasons, the board decides that claim 1 does not involve an inventive step, having regard to D1 in combination with D3. The main request is thus not allowable (Article 56 EPC).

3.2 First auxiliary request

Claim 1 adds to claim 1 of the main request the feature that the KBS and the augmented reality system are provided by different platforms.

In point 3.1 above, the board has considered that this feature was already implicitly present in claim 1 of the main request. Therefore, the reasoning given in section 3.1 above equally applies to the first auxiliary request and claim 1 does not meet the requirement of Article 56 EPC, having regard to the disclosure of D1 in combination with D3.

4. Second auxiliary request

Claim 1 adds to claim 1 of the first auxiliary request the feature that the augmented reality system comprises an engine to recognize, track and synthesize objects, and the KBS stores virtual object information.

However, D1 teaches that the recognising, tracking and synthesizing of the objects is performed by an AR engine (see paragraphs [0031] to [0037]), and D3 teaches that a KBS stores virtual object information.

Therefore the additional feature, in combination with the other features of claim 1, does not contribute to an inventive step. The second auxiliary request is not allowable (Article 56 EPC).

5. Conclusion

None of the requests is allowable under Article 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

A. Chavinier-Tomsic A. Ritzka

Decision electronically authenticated