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Datasheet for the decision of 11 February 2011

Case Number: T 1354/08 - 3.5.02

Application Number: 03764108.1

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IPC: G08B 13/196

Language of the proceedings: EN

Title of invention:
Method and apparatus for implementing multipurpose monitoring system

Applicant:
Magna B.S.P. Ltd.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)

Relevant legal provisions (EPC 1973):
-

Keyword:
"Added subject-matter - yes (all requests)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1354/08 - 3.5.02

D E C I S I O N
of the Technical Board of Appeal 3.5.02
of 11 February 2011

Appellant: Magna B.S.P. Ltd.
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 4 February 2008 refusing European patent application No. 03764108.1 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: M. Ruggiu
Members: R. Lord
P. Mühlens

Summary of Facts and Submissions

I. This is an appeal of the applicant against the decision of the examining division to refuse European patent application No. 03 764 108.1.

II. The reason given for the refusal was that the subject-matter of the independent claims 1 and 26 then on file did not involve an inventive step within the meaning of Article 56 EPC.

III. With his statement of grounds of appeal filed in his letter of 13 June 2008 the appellant filed amended sets of claims according to a main request and an auxiliary request.

In a communication accompanying the summons to oral proceedings, dated 22 November 2010, the board indicated, with reference to Article 123(2) EPC, that they had doubts as to whether the combinations of features defined in the independent claims of both of these requests were directly and unambiguously disclosed in the application as originally filed, particularly in the context of the definitions of the vertical arrangement of the two pairs of imagers and of the "joint processing" of the photographic data.

With a fax received at the EPO on 10 January 2011 the appellant filed amended sets of claims according to a main request (identified as "amended claims (set 1)") and an auxiliary request (identified as "amended claims (set 2)").

Oral proceedings before the board took place on 11 February 2011. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request ("amended claims (set 1)") or the first auxiliary request ("amended claims (set 2)"), both filed with the fax received at the EPO on 10 January 2011, or on the basis of claims 1 and 24 of one of the auxiliary requests 2 and 3 filed at the oral proceedings.

IV. Claim 1 according to the appellant's main request reads as follows:

"A method for the real-time monitoring of an environment by means of a plurality of imagers, comprising:

a) defining and storing in a memory (151) programs for processing data to be obtained from the photographic observation of objects by means of said plurality of imagers (11, 12);

b) determining and storing parameters, according to which the observation of a controlled space or sections thereof is carried out;

c) carrying out real-time photographic observation of said controlled space or sections thereof, according to observation parameters; and

d) processing data from said photographic observation,

characterized in that it further comprises:

e) positioning at least two identical optical imagers and at least two identical thermal imagers vertically one above the other by a distance of approximately 1 to 2 meters between each identical imager, such that the field of view of identical

imagers at least partially overlaps and that said objects are observable by said plurality of imagers from different angles of view;

f) carrying out said real-time photographic observation of said controlled space or sections thereof according to the observation parameters whereby said at least two optical imagers and said at least two thermal imagers scan a sector of said controlled space simultaneously;

g) processing captured images by means of pixel processing and a computerized system according to said programs, whereby to generate three-dimensional like data from each pixel and image provided by said at least two optical imagers and said at least two thermal imagers when scanning said sector at a same time period and to thereby detect suspected objects; and

h) logically processing pixels representing suspected objects with respect to the path and size of, and distance from, said suspected objects, and stored danger parameters, to classify a type and degree of danger of each of said suspected objects."

Claim 24 according to the appellant's main request reads as follows:

"A system for the real-time monitoring of an environment by means of a plurality of imagers comprising:

a) a plurality of imagers for obtaining real-time photographic data of a controlled space or sections thereof;

b) a set of motors for changing said controlled space or sections thereof for obtaining said real-time

photographic data; and

c) memory means for storing programs for processing real-time photographic data obtained from the photographic observation of objects by said plurality of imagers,

characterized in that said plurality of imagers includes at least two identical optical imagers and at least two identical thermal imagers which are positioned vertically one above the other by a distance of approximately 1 to 2 meters between each identical imager, such that the field of view of identical imagers at least partially overlaps, wherein said at least two optical imagers and said at least two thermal imagers are adapted to scan a sector of said controlled space simultaneously,

wherein one or more of said plurality of imagers is rotatable by means of one of said set of motors while identical imagers remain disposed on a common vertical line and at a different angle of view, so as to change said controlled space or sections thereof and to thereby generate said real-time photographic data;

said system further comprising:

d) a computerized system, operable to:

i. process captured images by means of pixel processing according to said programs, whereby to generate three-dimensional like data from each pixel and image provided by said at least two optical imagers and said at least two thermal imagers when scanning said sector at a same time period and to thereby detect suspected objects in real-time;

ii. logically process pixels representing suspected objects with respect to the path

and size of, and distance from, said suspected objects, and stored danger parameters; and

iii. classify a type and degree of danger of each of said suspected objects which were detected by means of said pixel processing."

Claims 1 and 24 according to the appellant's auxiliary request 1 differ from those of the main request in that:

– in claim 1, in paragraphs e), f) and g) and in claim 24, in the first paragraph of the characterizing portion (twice) and in paragraph d) i., the expression "optical imagers" is replaced by the expression "imagers in the normal vision band";

– in the same paragraphs the word "thermal" is replaced by "infra-red";

– in claim 1 paragraph h) is renumbered i), the following new paragraph is inserted before it:

"h) double-checking said detected suspected objects by means of images of said at least two imagers in the normal vision band by means of images of said at least two infra-red imagers;"

and the following new paragraph is added at the end of the claim:

"j) generating a warning signal when one or more of said suspected objects is approaching said controlled space and has been classified as having a sufficiently high degree of danger so as to be liable of damaging an authorized body within said controlled space."

– in the second paragraph of the characterizing portion of claim 24 the word "vertical" is added before the phrase "angle of view";

– and the following new paragraph is added at the

end of claim 24:

"iv. generate a warning signal when one or more of said suspected objects is approaching said controlled space and has been classified as having a sufficiently high degree of danger so as to be liable of damaging an authorized body within said controlled space."

Claim 1 according to the appellant's auxiliary request 2 differs from that of the main request in that in paragraph e) the phrase "vertically one above the other by a distance of approximately 1 to 2 meters between each identical imager" is deleted. Claim 24 according to the appellant's auxiliary request 2 differs from that of the main request in that in the first paragraph of the characterizing portion the phrase "which are positioned vertically one above the other by a distance of approximately 1 to 2 meters between each identical imager" is deleted.

Claims 1 and 24 according to the appellant's auxiliary request 3 differ from those of the auxiliary request 1 by the same two deletions as identified above with reference to auxiliary request 2.

V. The appellant essentially argued as follows:

The positioning of a pair of identical imagers one above the other and separated by approximately 1 to 2 meters was disclosed on page 20 of the description of the original application, in particular at lines 9 to 11.

The combination of two identical optical imagers and two identical thermal imagers was disclosed at page 30, lines 13 and 14.

The simultaneous scanning of a region by the two optical imagers and the two thermal imagers was disclosed at page 20, lines 9 to 14 and in the paragraph spanning pages 35 and 36. Moreover, the advantage of such simultaneous scanning was readily apparent from consideration of examples such as observing a person wearing camouflage clothing, and observing a person wearing thermally insulating clothing at dawn or dusk.

The generation of three-dimensional like data by combining the image data from both pairs of imagers was disclosed at page 24, lines 3 to 5 and 17 to 19, page 25, lines 1, 2, 7 and 8, page 30, lines 13 to 17 and page 37, second paragraph.

Reasons for the Decision

1. The appeal is admissible.

2. Main request

2.1 Independent claim 1 according to this request defines in paragraph e) "*positioning at least two identical optical imagers and at least two identical thermal imagers vertically one above the other by a distance of approximately 1 to 2 meters between each identical imager*". This definition combines the feature that there is (at least) a pair of identical optical imagers

as well as a pair of identical thermal imagers with the feature that the imagers of each identical pair are positioned vertically one above the other with a separation of approximately 1 to 2 meters. Neither of these features was defined in the claims of the application as originally filed. In the original description the latter feature was disclosed in the second paragraph of page 20, but that passage referred only to a single pair of identical cameras. The only explicit disclosure in the original application of a method or apparatus making use of a pair of optical imagers and a pair of thermal imagers is to be found in the paragraph spanning pages 35 and 36, but in the system described there, although the FLIR (i.e. thermal) cameras are positioned on the system vertical axis (so that they must be positioned one above the other), the two cameras operating in the normal vision band (i.e. optical imagers) are described as being "*located horizontally from the two sides of the system vertical axis*", and are thus not positioned vertically one above the other. This passage thus teaches that, when there is a pair of optical imagers and a pair of thermal imagers (as defined in the present claim 1), then only the thermal imagers are positioned vertically one above the other, the optical imagers being positioned at the same height and separated horizontally. The definition of paragraph e) of the present claim 1 therefore contradicts this teaching of the original application. Moreover, the original application contains no suggestion that the teaching of the passages on page 20 and pages 35 and 36 cited above can be combined in the manner implied by the present claim 1, because the only other passages in the application which indicate that the system might comprise a pair of optical imagers and

a pair of thermal imagers do not suggest that they are arranged with respect to one another in the manner now claimed (see the paragraph spanning pages 21 and 22, which refers to "*at least two CCD cameras ... and/or at least two Infra Red cameras*" (thus including the option of two of each), but concludes that the separation can be "*between 0.5 to 50 meter*" and "*horizontally, vertically or at any angle*", and the third paragraph on page 30, which refers to "*a pair of identical CCD cameras ... and/or pair of FLIR cameras*", but says nothing at all about how they are arranged relative to one another. The board therefore concludes that the definition of paragraph e) of claim 1 of the appellant's main request defines subject-matter which extends beyond the content of the application as originally filed, contrary to the requirements of Article 123(2) EPC. Since the independent claim 24 of the appellant's main request contains a corresponding definition in the first paragraph of the characterizing portion, this conclusion applies correspondingly to that claim.

2.2 Independent claim 1 according to the appellant's main request defines in paragraph f) that "*said at least two optical imagers and said at least two thermal imagers scan a sector of said controlled space simultaneously*". The application as originally filed however only contained one passage which could be considered to relate to the issue of whether the two different types of imagers scan simultaneously or separately, namely the paragraph spanning pages 35 and 36, but that teaches that "*the different camera types are optimal on different conditions: the FLIRS are optimal at night and in bad weather and the video cameras are optimal in*

the daytime and in good weather", which suggests that the two different types of imager should be used separately at different times, depending on the prevailing conditions. All the other references in the application to simultaneous scanning by two imagers relate only to the two imagers of a pair, not to imagers of different types. The appellant referred in this context to examples (observing a person wearing camouflage clothing, and observing a person wearing thermally insulating clothing at dawn or dusk) in which the simultaneous use of the two types of imager would be advantageous. The board considers that such considerations, although potentially significant for the assessment of inventive step, have no relevance to the question of what was disclosed in the original application, since neither of these examples is mentioned or even suggested there. The board therefore concludes that, by specifying that the two different types of imager scan simultaneously, paragraph f) of claim 1 of the appellant's main request defines subject-matter which extends beyond the content of the application as originally filed, contrary to the requirements of Article 123(2) EPC. Since the independent claim 24 of the appellant's main request contains a corresponding definition in the first paragraph of the characterizing portion, this conclusion applies correspondingly to that claim.

2.3 Independent claim 1 according to the appellant's main request defines in paragraph g) that the "*three-dimensional like data*" is generated from the images provided by "*said at least two optical imagers and said at least two thermal imagers when scanning said sector at a same time period*". This definition implies the

simultaneous scanning of both types of imagers, so results in the same contravention of Article 123(2) EPC as discussed in paragraph 2.2 above. Moreover, it specifies that in the processing of captured images to generate three-dimensional data, the images from the two different types of imager are combined. However, in the original application the description of the processing of images to produce three-dimensional data (which appears mainly on pages 24, 25 and 30) was consistently limited to the case of using images from two (or more) imagers of the same type. The appellant has argued that the second paragraph on page 37 of the description does suggest the combination of images from both types of imager, since in the phrase "*utilizing both CCD and/or FLIR cameras*" in the fourth and fifth lines of that paragraph the "and" alternative implies combining data from a pair of optical imagers and a pair of thermal imagers. The board does not find this argument to be convincing for two reasons. Firstly, this cited paragraph concerns the double-checking step, not the process of generating three-dimensional data, as is apparent from the first sentence of the paragraph and from the words immediately following the cited text. Secondly, taken in the context of the paragraph as a whole (in particular the wording "*both ... cameras*" in lines 4 to 5, "*both images*" in line 8 and "*only a pair of such pixels*" in line 11), it seems that the process being described involves images from just two imagers. The board therefore concludes that, by specifying that this process combines images from both pairs of imagers, paragraph g) of claim 1 of the appellant's main request defines subject-matter which extends beyond the content of the application as originally filed, contrary to the requirements of Article 123(2) EPC. Since the

independent claim 24 of the appellant's main request contains a corresponding definition in paragraph d) i., this conclusion applies correspondingly to that claim.

3. Auxiliary Requests

3.1 The amendments to the independent claims of the appellant's auxiliary request 1 compared to those of the main request consist only of minor changes in terminology (primarily with respect to the imagers) and the addition of definitions relating to double-checking and the generation of warning signals, none of which has any impact on the deficiencies under Article 123(2) EPC identified in paragraphs 2.1 to 2.3 above.

3.2 The amendments to the independent claims of the appellant's auxiliary requests 2 and 3 compared respectively to those of the main request and auxiliary request 1 consist only of the deletion of the definitions discussed in paragraph 2.1 above. Thus although the deficiencies described in that paragraph do not arise in these requests, both of these requests remain subject to the deficiencies described in paragraphs 2.2 and 2.3.

4. Thus, the two independent claims according to each of the appellant's requests contravene Article 123(2) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

U. Bultmann M. Ruggiu