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**Datasheet for the decision
of 7 February 2020**

Case Number: T 0532/15 - 3.5.04

Application Number: 10186448.6

Publication Number: 2317471

IPC: G06T7/00, G06K9/20, H04N5/272

Language of the proceedings: EN

Title of invention:
An automated test method including transparent black regions

Applicant:
Vestel Elektronik Sanayi ve Ticaret A.S.

Headword:

Relevant legal provisions:
EPC Art. 84

Keyword:
Claims - clarity - main and auxiliary request (no)

Decisions cited:

Catchword:



Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 0532/15 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 7 February 2020

Appellant: Vestel Elektronik Sanayi ve Ticaret A.S.
(Applicant) Organize Sanayi Bölgesi
45030 Manisa (TR)

Representative: Cayli, Hülya
Paragon Consultancy Inc.
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 17 October 2014
refusing European patent application
No. 10186448.6 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman C. Kunzelmann
Members: B. Willems
G. Decker

Summary of Facts and Submissions

- I. The appeal is against the decision of the examining division dated 17 October 2014 refusing European patent application No. 10186448.6 pursuant to Article 97(2) EPC. The application was published as EP 2 317 471 A1.
- II. The documents cited in the decision under appeal included the following:
- D3: US 5,859,923.
- III. The decision under appeal was based on the following grounds.
- Claim 1 of the main request did not meet the requirements of Article 84 EPC and the subject-matter of claims 1 to 8 lacked inventive step over the disclosure of D3 combined with the common general knowledge of the person skilled in the art (Article 56 EPC).
 - Claim 1 of the auxiliary request did not meet the requirements of Articles 83, 84 and 123(2) EPC.
- IV. The applicant filed notice of appeal. With the statement of grounds of appeal, the appellant filed claims in accordance with a main request and an auxiliary request. It requested that the decision under appeal be set aside and that a European patent be granted on the basis of the claims of the main request or the auxiliary request. The appellant argued that the feature "*black transparent regions*" had technical character, indicated a basis for claim 1 of the auxiliary request in the application as filed and provided reasons as to why the subject-matter of

claim 1 of the main and the auxiliary request was inventive over the disclosure of D3.

- V. The board issued a summons to oral proceedings. In a communication under Article 15(1) RPBA (Rules of Procedure of the Boards of Appeal, OJ 2007, 536), annexed to the summons, the board gave the following provisional opinion.

Claim 1 of the main request and the auxiliary request did not meet the requirements of Article 84 EPC because the meanings of the terms "*black transparent regions*", "*mask*", "*template*", "*background*" and "*foreground*" were not clear from the claim.

The application did not meet the requirements of Article 83 EPC.

- VI. By letter dated 17 December 2019, the appellant informed the board that it would not be attending the oral proceedings. However, it did not comment on the objections raised in the board's communication.
- VII. On 7 February 2020, the board held oral proceedings in the absence of the appellant.

The chairman noted that it appeared from the file that the appellant had requested that the decision under appeal be set aside and that a European patent be granted on the basis of the claims of the main request or the auxiliary request, both requests filed with the statement of grounds of appeal.

At the end of the oral proceedings, the chairman announced the board's decision.

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

"An automated test method for performing image comparison between the images including black transparent regions in video images at a Digital Video Broadcasting-Terrestrial product characterized in that it comprises the steps of

- Capturing a target test image,
- Preparing a template image (2, 3),
- Preparing a mask image (4) wherein foreground information is displayed as white pixels and background information is displayed as black pixels,
- Segmentation of foreground (51) by determining values of the foreground pixels of the template (2, 3) and the mask (4),
- Pixel value based foreground comparison in view of the target test image and the foreground information (51) of template image (2, 3),
- Background control wherein it is checked whether any foreground information (51) exists on the pixels in the background (52) of the test image or not."

IX. Claim 1 of the auxiliary request specifies:

"An automated test method for performing image comparison between the images including black transparent regions as foreground information in video images at a Digital Video Broadcasting-Terrestrial product characterized in that it comprises the steps of

- Preparing a template image (2, 3) by capturing an image from said Digital Video Broadcasting-Terrestrial product and removing the video content on said captured image,

- Capturing a test image from said Digital Video Broadcasting-Terrestrial product,
- Preparing a mask image (4) wherein said mask image (4) allows only the foreground information of the captured test image to be shown,
- Applying said mask (4) to the captured test image,
- Segmentation of foreground (51) by determining values of the foreground pixels of the template (2, 3) and the captured test image comprising mask (4),
- Pixel value based foreground comparison in view of the captured test image with mask (4) and the foreground information (51) of template image (2, 3),
- Background control wherein it is checked whether the background (52) of the captured test image with mask (4) comprises any bright pixel or color pixel or not."

X. The examining division's objections relevant to the present decision may be summarised as follows.

The phrase "*black transparent region*" was neither a standard technical term nor clearly defined in the description (see decision under appeal, points 11 and 18).

XI. The appellant's arguments relevant to the present decision may be summarised as follows.

The application disclosed a test method for testing the colours of foreground objects, such as a digital television menu. Conventionally, the colours of a test image displayed on a television were compared with the colours of template images. Black transparent regions of the foreground objects could not be colour tested because, in the template images, black transparent regions were shown in black and thus did not have any distinctive colour. According to the invention, colours

of black transparent regions could be tested automatically. A mask was applied to the test image. In order to test the colour of the black transparent regions of the foreground objects, the background of the test image with mask was checked to see whether it contained any bright pixel or colour pixel (see pages 2 and 3 of the statement of grounds of appeal).

Reasons for the Decision

1. The appeal is admissible.
2. *Clarity (Article 84 EPC) - main request*
 - 2.1 It is established case law that, in order to be clear, the claims *per se* must be free of contradiction. They must be clear in themselves when read by the person skilled in the art, without any reference to the content of the description. The meaning of the essential features should be clear for the person skilled in the art from the wording of the claim alone (see Case Law of the Boards of Appeal of the European Patent Office, 9th edition 2019, II.A.3.1).
 - 2.2 Claim 1 of the main request specifies "*black transparent regions in video images*". This phrase is contradictory in itself because image regions are normally either black or transparent but not both at the same time.

According to page 4, lines 32 and 33 of the description as filed, reference numeral 11 in Figure 1 shows black transparent regions. According to claim 2 as originally filed, the lines of the transparent region in the template image are left or right inclined lines.

Neither Figure 1 nor original claim 2 clarifies what is meant by "*black transparent regions*".

The argument that black transparent regions in conventional template images do not have any distinctive colour and thus cannot be colour tested, whereas they can be tested according to the invention (see section XI above), did not convince the board because it does not address the objection that the term "*black transparent region*" is neither a standard technical term nor clearly defined in the description (see section X above). Moreover, the appellant has not given a clear definition or indicated a passage in the description with a definition of this term. The mere fact that "*black transparent regions*" cause a specific problem does not define what "*black transparent regions*" are in the context of the application in this case.

- 2.3 Claim 1 of the main request specifies preparing a template image. However, the claim does not specify any technical properties of the template image or how the template image is generated.

According to the description as filed, page 2, lines 24 to 27, the template image is generated by testers and includes only foreground information.

According to the description as filed, page 4, lines 27 to 31, the template is obtained by removing video content on a captured test image by e.g. "*disconnecting video line*".

Reading both passages in conjunction, removing video content by "*disconnecting video line*" results in a template image with only foreground information.

However, when disconnecting a video line there would be no image to display. Therefore, it is not clear what information is left if video content is removed from a captured test image.

2.4 Claim 1 of the main request specifies "*segmentation of foreground (51) by determining values of the foreground pixels of the template (2, 3) and the mask (4)*".

It is not clear whether the foreground is to be segmented into different parts or whether the foreground is to be extracted from the template.

(a) If the foreground is to be segmented, claim 1 neither defines the image whose foreground is to be segmented nor specifies the result of the segmentation, i.e. into which parts the foreground is divided.

Furthermore, the claim does not specify any steps for extracting the foreground pixels of the template. Hence, it is not apparent which values of the foreground pixels of the template are to be determined. The foreground of the mask has been defined as white pixels. It is not apparent which values (luminance, DC components, etc.) of these white pixels are to be determined. The template and the mask are two separate images. It is not apparent how the values of two images are to be used to segment a "*foreground*".

(b) If the foreground is to be extracted from the template, then the claim seems to give a circular definition of "*foreground*", i.e. the foreground is extracted using the values of the foreground pixels. Moreover, this would be in contradiction

with the description, page 2, lines 25 to 27, which discloses that the template image only includes foreground information, i.e. the foreground need not be extracted.

According to page 5, lines 33 and 34, in the segmentation "*pure black pixels are shown as background (52) since they will be replaced with the video content in real tests*" (emphasis added). It is not apparent what makes a test a real test.

2.5 Claim 1 of the main request specifies "*Pixel value based foreground comparison*" of the target test image and the foreground of the template image. However, claim 1 does not specify which values for pixels are compared (e.g. luminance, chrominance, DC components).

2.6 Claim 1 of the main request specifies "*Background control wherein it is checked whether any foreground information (51) exists on the pixels in the background (52) of the test image*". It is not clear how "*foreground*" can exist on "*background*" pixels. An image can be split into foreground and background and a pixel normally does not belong to both. Moreover, claim 1 does not specify any preceding steps for extracting the background from the captured test image.

According to the description, page 2, line 32 to page 3, line 2, in the control step "*it is checked whether any tones or colors are present on the background*", and if tone information is present, then the test fails.

2.7 In view of the above, claim 1 of the main request does not meet the requirements of Article 84 EPC because the meanings of the terms "*black transparent regions*",

"*mask*", "*template*", "*background*" and "*foreground*" are not clear from the claim.

3. *Clarity (Article 84 EPC) - auxiliary request*

3.1 Claim 1 of the auxiliary request specifies "*black transparent regions*". The board refers to the arguments set out in point 2.2 above.

3.2 Claim 1 of the auxiliary request specifies preparing a template image by removing video content on the captured image. The board refers to the arguments set out in point 2.3 above.

3.3 Claim 1 of the auxiliary request specifies "*Segmentation of foreground (51) by determining values of the foreground pixels of the template (2, 3) and the captured test image comprising mask (4)*". The board refers to the arguments set out in point 2.4 above.

3.4 In view of the above, claim 1 of the auxiliary request does not meet the requirements of Article 84 EPC.

4. Since neither of the appellant's requests is allowable, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



K. Boelicke

C. Kunzelmann

Decision electronically authenticated