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**Datasheet for the decision  
of 30 March 2022**

**Case Number:** T 2218/19 - 3.5.05

**Application Number:** 07713141.5

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**Language of the proceedings:** EN

**Title of invention:**  
A SYSTEM FOR DETECTING VEHICLES

**Patent Proprietor:**  
Kria S.R.L.

**Opponent:**  
SCAN SERVICE s.r.l

**Headword:**  
A SYSTEM FOR DETECTING VEHICLES / Kria

**Relevant legal provisions:**  
EPC Art. 56

**Keyword:**  
Inventive step - non-obvious modification



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Case Number: T 2218/19 - 3.5.05

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.05**  
**of 30 March 2022**

**Appellant:** SCAN SERVICE s.r.l.  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
13 June 2019 concerning maintenance of the  
European Patent No. 1997090 in amended form.**

**Composition of the Board:**

**Chair** A. Ritzka  
**Members:** N. H. Uhlmann  
E. Mille

## Summary of Facts and Submissions

- I. The appellant-opponent appealed against the opposition division's interlocutory decision dispatched on 13 June 2019 to maintain European patent No. 1 997 090 in amended form according to the second auxiliary request submitted on 14 May 2018.
- II. This was the second decision by the opposition division in the case. In a first decision dated 29 November 2012, the opposition was rejected. The opponent appealed. The first decision was set aside by the competent board (case T 0045/13 decided on 13 September 2017), and the case was remitted to the opposition division for further prosecution.
- III. The decision under appeal made reference to, *inter alia*, the following prior-art documents:  

D6 WO 93/19441  
D12 T. Jebara & A. Pentland, "3D structure from 2D motion", IEEE Signal Proc. Mag. Vol. 16, 1999
- IV. In its statement setting out the grounds of appeal, the appellant requested that the decision be set aside and that the patent be revoked.
- V. The respondent-proprietor filed a reply to the appeal (including a document "Appendix 1") and requested that the appeal be dismissed. In the alternative, it requested that the patent be maintained according to one of auxiliary requests 3 and 8 to 15, all re-filed with the reply.
- VI. In a letter dated 3 September 2020, the appellant submitted further arguments.

VII. The board summoned the parties to oral proceedings and set out its provisional view on the case in a communication under Article 15(1) RPBA 2020.

VIII. None of the parties submitted any comments in writing.

IX. The oral proceedings took place via video conference.

X. Final requests

The appellant's requests were that the decision under appeal be set aside and that the patent be revoked.

The respondent's requests were that the appeal be dismissed and that the patent thus be maintained based on the set of claims of auxiliary request 2 as decided by the opposition division or, alternatively, that the patent be maintained according to the set of claims of any of auxiliary requests 3 and 8 to 15, all requests re-filed with the reply to the statement setting out the grounds of appeal.

XI. Claim 1 of the auxiliary request 2 of the respondent reads as follows:

"A system to detect the transit of vehicles (V) having license plates (T), the system comprising:

- at least one video camera (12) to detect license plates capable of framing the license plates of said vehicles and of generating a corresponding video signal,
- a processing module chain (100-106) sensitive to said video signal to perform license-plate recognition processing on said video signal,
- at least one further video camera (14) to detect vehicles capable of framing a zone (C) of transit of said vehicles (V) having license plates and of generating a respective corresponding video signal, and

- a respective chain of processing modules (200-206) sensitive to the video signal generated by the one further video camera (14) to perform on said respective video signal vehicle tracking processing to detect the position and three-dimensional shape of vehicles in transit in said zone,

characterised in that said processing module chain (100-106) includes a test module (102) to detect the presence of a vehicle (V) in transit by performing a test as to whether an image of a license plate persists on a series of images (T1, ..., Tn) of the video signal generated by the one video camera (12), and a plate tracking module (104) which is activated by said test module (102) when said test has positive outcome,

wherein the system includes a supervisor module (300) that aggregates the results of said license-plate-recognition processing modules (100-106) and said vehicle-tracking processing modules (200-206) to generate information records (304) each identifying the transit modality in said zone (C) of a vehicle (V) identified by a given license plate tracked and recognised by said chain of processing (100-106) wherein:

- said respective chain of processing (200-206) sensitive to said respective video signal is configured to perform on said respective video signal processing of the Structure From Motion or SFM type, and

- said processing module chain (100-106) detects a license plate in a certain position on said image, and in consequence thereof the SFM module activates generation of a possible vehicle in the corresponding position on the image of the further video camera (14)."

XII. In view of the board's decision, the wording of the claims of the further auxiliary requests of the respondent is of no relevance.

### **Reasons for the Decision**

1. The patent in suit pertains to a system for detecting vehicles and their number plates. It uses two video cameras. Camera 12 and the corresponding software detect a number plate in a certain position in the video image. In consequence of this, a possible vehicle is detected in the corresponding position in the video image from the other camera 14.
2. Prior-art document D6 discloses a similar system comprising two video cameras. In contrast, a number plate is detected after a vehicle is detected.

### **Auxiliary request 2 of the respondent - patent as maintained**

3. The opposition division decided that auxiliary request 2 meets the requirements of Articles 83 and 123(2) EPC. The board agrees, and the appellant did not submit any counter-arguments.
4. Inventive step
  - 4.1 It is common ground that document D6 forms a suitable starting point for the inventive-step analysis and that D6 does not disclose the following two features of claim 1:

CF6.2.1	"said respective chain of processing (200-206) sensitive to said respective video signal is configured to perform on said respective video signal processing of the Structure From Motion or SFM type"
CF6.2.2	"said processing module chain (100-106) detects a license plate in a certain position on said image, and in consequence thereof the SFM module activates generation of a possible vehicle in the corresponding position on the image of the further video camera (14) "

- 4.2 Technical effect and objective technical problem
- 4.2.1 In the statement of grounds, the appellant did not formulate any technical effect caused by the distinguishing features.
- 4.2.2 In its letter dated 3 September 2020, the appellant argued that the two distinguishing features do not lead to a combined technical effect. Feature CF6.2.1 led to the technical effect referred to in paragraph 77 of the patent. The appellant did not specify any technical effect of feature CF6.2.2.
- 4.2.3 The respondent argued in its reply with regard to technical effect that the distinguishing features make "it possible to detect a license plate 'in breach' (that is unduly overtaking, exceeding a speed limit, 'burning' a red light, and so on) and then properly, reliably and precisely identifying (via SFM processing) the vehicle having that very one license plate".
- 4.2.4 The appellant argued that the technical effect suggested by the respondent in its reply was "not

implied or at least related to the technical problem initially suggested in the opposed patent".

4.2.5 In the statement of grounds, the appellant did not formulate any objective technical problem to be solved by the distinguishing features.

4.2.6 In the letter dated 3 September 2020, the appellant formulated the following two problems:

(a) "increase the reliability of the system which aggregates information from two different cameras"

(b) "find an alternative to the known trigger mechanics"

4.2.7 The respondent argued that the distinguishing features solved the problem of "making sure that a certain sanction is reliably applied to a vehicle which actually violated a traffic regulation and not to an 'innocent' vehicle in the vicinity".

4.2.8 The board holds that the distinguishing features CF6.2.1 and CF6.2.2 solve independent problems.

Feature CF6.2.1 solves the problem mentioned in paragraph 77 of the patent under appeal (page 19, lines 25 to 34 of the description as translated):

how to "identify individual moving objects even in highly complex situations ( such as a road intersection among several different directions) or in scenes in which the motion of vehicles is partially masked by the motion of people (for example in areas reserved for pedestrians) and to select only those motions (and thus only those vehicles) that are significant for the particular application".



4.2.9 Feature CF6.2.2 includes two aspects:

- (a) in consequence of a licence plate detection, the SFM module activates generation of a possible vehicle
- (b) the licence plate is detected at a **certain position** in an image, and the generation concerns a vehicle in the **corresponding position** in the image of the further camera

4.2.10 During the discussion at the oral proceedings, the appellant disagreed with the preliminary opinion of the board set out in its communication in accordance with Article 15(1) RPBA 2020, according to which the feature of claim 1 labelled CF6.2.2 in this communication included two aspects labelled (a) and (b).

In the board's view, the two aspects (a) and (b) fully correspond to feature CF6.2.2 as claimed.

The appellant argued that the aspects (a) and (b) were "switched". This argument is not convincing. The labels do not imply any sequence. Rather, both aspects concern detection and generation.

4.2.11 Aspect (b) ensures that the generation concerns the vehicle with the detected licence plate. The objective technical problem solved by feature CF6.2.2 may then be worded as "how to ensure that the generation concerns the vehicle with the detected licence plate". This problem is related to the problem suggested by the respondent (see point 4.2.7 above) and to the object of the invention mentioned on page 4, lines 27 to 30 of the description, i.e. that the detection system is "completely reliable in terms of correct detection of violations (in particular with regard to false alarms)".

Thus, the problem formulation submitted by the appellant (point 4.2.6(b) above) is not accepted.

#### 4.3 Obviousness

4.3.1 The board concurs with the decision under appeal that the skilled person, facing the problem set out in point 4.2.8 above, would use the SFM technique known from document D12 and arrive at feature CF6.2.1 without exercising an inventive step.

4.3.2 Regarding feature CF6.2.2, the board agrees with the appellant that the skilled person would make use of the technology generally available in 2006, such as better cameras (than the ones available at the date of publication of D6, i.e. 1992), faster computers and more powerful OCR programs. Doing so would not, however, result in feature CF6.2.2.

4.3.3 The appellant argued that when the skilled person implemented the SFM function for D6's camera 6 (feature CF6.2.1), they would notice that camera 6 would become too slow to be able to trigger camera 8. Thus, the skilled person would swap the trigger sequence, i.e. it would let camera 8 trigger camera 6.

This argument is not convincing. First, the skilled person would not use the SFM function in D6's system if this function created such a timing problem. Second, even if the person skilled in the art used SFM despite this problem, there is no indication in the prior-art documents at hand that they would swap the trigger sequence. Third, even if the trigger sequence were swapped, the skilled person would not find any information or suggestions in the prior art regarding the consideration of the positions in the images in feature CF6.2.2.

4.3.4 The appellant argued that document D6 implicitly disclosed that the number plate detection camera could trigger the vehicle detection camera.

The board is not convinced. D6's Figure 6 discloses bidirectional connections between the cameras 6 and 8 and the block "30, 34, 38". However, there is no disclosure in this figure of any triggering of a camera.

4.3.5 The appellant's arguments that as camera 8 triggers a flash 40 (Figure 5), it is able to trigger another device, hence camera 8 can trigger camera 6, is not convincing. Triggering a camera is significantly different from triggering a flash. Furthermore, this argument, even if accepted, does not lead to feature CF6.2.2. It is not apparent how the skilled person would arrive at the consideration of the positions as claimed.

4.3.6 The appellant pointed to page 8, line 13 of document D6, which refers to "trigger acquisition camera 8". The board holds that this wording relates to the triggering of the flash. This is apparent from the preceding lines 8 to 12 on page 8.

4.3.7 The argument that changing the triggering sequence was an easy task for the skilled person and that only two possibilities were present is not convincing. A mere change of the triggering sequence does not lead to feature CF6.2.2.

4.3.8 The appellant stated that feature CF6.2.2 related to a non-technical forensic problem. The board disagrees. The problem set out in point 4.2.11 above is clearly technical.

4.3.9 Based on page 50, lines 16 and 17, the appellant argued that the system disclosed in D6 was able to simultan-

ously track a number of vehicles on multi-lane carriageways. The board accepts this. However, this teaching in D6 does not disclose or suggest feature CF6.2.2.

- 4.3.10 The appellant further submitted that "the technical teaching of D6 is that the system camera/circuitry/software with the higher computation speed triggers the acquisition of data of the system camera/circuitry/software with a lower computation speed".

The appellant did not provide any passage in D6 supporting the above statement. The board is not able to locate any, either.

- 4.4 In view of the above observations, the subject-matter of claim 1 of the auxiliary request 2 involves an inventive step within the meaning of Article 56 EPC.

5. Conclusion

The patent as maintained by the opposition division according to auxiliary request 2 of the respondent meets the requirements of the EPC.

**Order**

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

The appeal is dismissed.

The Registrar:

The Chair:



G. Nachtigall

A. Ritzka

Decision electronically authenticated