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**Datasheet for the decision  
of 25 September 2013**

**Case Number:** T 1386/09 - 3.5.04

**Application Number:** 06113750.1

**Publication Number:** 1724724

**IPC:** G06T5/20, G01S7/292

**Language of the proceedings:** EN

**Title of invention:**

Closely-spaced multiple targets detection using a regional window as a discriminant function

**Applicant:**

Lockheed Martin Corporation

**Headword:**

**Relevant legal provisions:**

EPC Art. 123(2)

**Keyword:**

Amendments - added subject-matter (yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern  
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Case Number: T 1386/09 - 3.5.04

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.04**  
**of 25 September 2013**

**Appellant:** Lockheed Martin Corporation  
(Applicant) 6801 Rockledge Drive  
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**Representative:** Milanov, Nina Vendela Maria  
Awapatent AB  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted on 3 March 2009  
refusing European patent application No.  
06113750.1 pursuant to Article 97(2) EPC.

**Composition of the Board:**

**Chairman:** F. Edlinger  
**Members:** C. Kunzelmann  
B. Müller

## Summary of Facts and Submissions

- I. The appeal is against the decision of the examining division to refuse European patent application No. 06 113 750.1 under Article 97(2) of the European Patent Convention (EPC).
- II. The application was refused on the ground that claims 1 and 9 then on file were not clear and not supported by the description (Article 84 EPC). The reasons given in the decision under appeal may be summarised as follows:

The invention had the objective of detecting closely spaced multiple objects in an image. All the embodiments of the description required (i) single object detection by running a local-max algorithm for a 2x2 pixel matrix and (ii) closely spaced object detection by using a 3x3 or 5x5 pixel matrix window such that if there were multiple detections in the window, there were closely spaced objects. These features were essential for the invention. However, they were not contained in claims 1 and 9.

- III. The applicant appealed against this decision. With the statement of grounds of appeal the appellant filed claims of a new main and first and second auxiliary requests. The appellant *inter alia* submitted that an additional step had been added to claim 1, namely "removing, from said image data, pixels associated with multiple detections within said 2x2 pixel regions" and submitted that support for this amendment was to be found in in paragraph [0020] of the description and in figure 9 (step 903).

IV. The appellant requested that the decision under appeal be set aside and that one of these requests be allowed. Oral proceedings were requested as a precaution.

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

"A method for detecting closely spaced objects, comprising the steps of:  
imaging (901) a scene and providing image data;  
running a first algorithm (902), having a predetermined CFAR (Constant False Alarm Rate), that determines whether there are any single object detections within the scene by using 2x2 pixel regions of said image data,  
removing, from said image data, pixels associated with multiple detections within said 2x2 pixel regions;  
running a second algorithm (903), having substantially the same predetermined CFAR and having a first regional window corresponding to a matrix of pixels, where said second algorithm determines (905), after said removing, whether there are closely spaced objects within the first regional window, by determining whether there is more than one detection within the first regional window; and  
recording (906) the closely spaced objects detected within the first regional window."

Claim 1 of the first auxiliary request reads as follows:

"A method for detecting closely spaced objects, comprising the steps of:  
imaging (901) a scene and providing image data;  
running a first algorithm (902), having a predetermined CFAR (Constant False Alarm Rate), that determines whether there are any single object detections within

the scene by using 2x2 pixel regions of said image data,  
removing, from said image data, pixels associated with multiple detections within said 2x2 pixel regions *by using a local-max algorithm*;  
running a second algorithm (903), having substantially the same predetermined CFAR and having a first regional window corresponding to a matrix of pixels, where said second algorithm determines (905), after said removing, whether there are closely spaced objects within the first regional window, by determining whether there is more than one detection within the first regional window; and  
recording (906) the closely spaced objects detected within the first regional window."

Claim 1 of the second auxiliary request reads as follows:

"A method for detecting closely spaced objects, comprising the steps of:  
imaging (901) a scene and providing image data;  
running a first algorithm (902), having a predetermined CFAR (Constant False Alarm Rate), that determines whether there are any single object detections within the scene by using 2x2 pixel regions of said image data,  
removing, from said image data, pixels associated with multiple detections within said 2x2 pixel regions *by using a local-max algorithm*;  
running a second algorithm (903), having substantially the same predetermined CFAR and having a first regional window corresponding to a matrix of pixels, *wherein said first regional window includes at least a 3x3 matrix*, where said second algorithm determines (905), after said removing, whether there are closely spaced

objects within the first regional window, by determining whether there is more than one detection within the first regional window; and recording (906) the closely spaced objects detected within the first regional window."

Amendments with respect to claim 1 of the main request are set in *italics*.

- VI. The board issued a communication pursuant to Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA), annexed to a summons to oral proceedings. In this communication the board raised an objection under Article 123(2) EPC against claim 1 of all the requests concerning the additional step added to claim 1 (see point III above). Moreover, the board indicated that it tended to agree with the decision under appeal that claim 1 did not meet the requirements of Article 84 EPC 1973.
- VII. In a letter of reply dated 4 July 2013 the appellant informed the board that the applicant had decided "to abandon the application" and would not attend the oral proceedings. The request for oral proceedings was withdrawn. In a subsequent telephone conversation with the board's Registrar, the representative pointed out that the appellant did not intend to withdraw the appeal or the application and that a decision by the board was requested. No submissions dealing with the objections in the board's communication were filed.
- VIII. The board then cancelled the oral proceedings.

## **Reasons for the Decision**

1. The appeal is admissible.
2. *Added subject-matter (Article 123(2) EPC)*
  - 2.1 Claim 1 of all the requests comprises the feature "removing, from said image data, pixels associated with multiple detections within said 2x2 pixel regions".
  - 2.2 This feature is not disclosed in the application as filed. In the application as filed, there is no disclosure of pixels being removed from the image data.
  - 2.3 According to paragraphs [0019] and [0020] of the description as filed, if "there are multiple detections in a 2x2 region, then the algorithm removes the multiple detections in step 903". Also the flow chart of figure 9 shows in step 903 that multiple detections are removed when a single detection is run in each 2x2 region (see step 902). But these parts of the application do not disclose the multiple detections being removed by removing pixels from the image data, i.e. the data resulting from imaging the scene.
  - 2.4 The appellant's argument in the statement of grounds of appeal that paragraph [0004] of the description disclosed that the pixels were removed from the image data by stating that "image data [is provided] to a processor which runs a plurality of algorithms for processing the image data" did not convince the board. The fact that the processor runs the first and the second algorithm specified in claim 1 for processing the image data does not imply that the multiple detections identified (within a 2x2 window) when

running the first algorithm are removed by removing the associated pixels from the image data. For instance, in the processor detections may be indexed without removing pixels, and multiple detections may be removed by processing the index data.

2.5 Hence claim 1 of all the requests has been amended in such a way that it contains subject-matter which extends beyond the content of the application as filed. Thus these claims infringe Article 123(2) EPC, and therefore the decision under appeal cannot be set aside.

3. In view of the above the issues concerning Article 84 EPC 1973 raised in the decision under appeal need not be decided by the board.

## Order

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

The appeal is dismissed.

The Registrar:

The Chairman:



M. Canueto Carbajo

F. Edlinger

Decision electronically authenticated