

Title (en)  
METHOD AND DEVICE FOR MULTI-SPECTRAL IMAGING BY MEANS OF A DIGITAL RGB SENSOR

Title (de)  
VERFAHREN UND VORRICHTUNG FÜR MULTISPEKTRALABBILDUNG ÜBER EINEN DIGITALEN RGB-SENSOR

Title (fr)  
PROCÉDÉ ET DISPOSITIF D'IMAGERIE MULTISPECTRALE AU MOYEN D'UN CAPTEUR RGB NUMÉRIQUE

Publication  
**EP 2589225 A1 20130508 (EN)**

Application  
**EP 11710051 A 20110307**

Priority  
• LV 100098 A 20100629  
• LV 2011000003 W 20110307

Abstract (en)  
[origin: WO2012002787A1] The invention relates to methods of digital colour image processing, in particular - to selection of images corresponding to more than three different spectral bands from a single RGB data set. In the proposed method of multi-spectral imaging, the object is illuminated simultaneously at several spectral bands, and the values of  $R_i$ ,  $G_i$  and  $B_i$ -signals detected at each  $i$ -pixel of the image are identified. Further they are compared mutually and with externally determined signal discrimination level  $S$  that allows registering only one or two of the  $R$ -,  $G$ - and/or  $B$ -bands within the spectral sensitivity range of the sensor. In order to increase the number of available spectral images, the  $S$ -values are continuously variable up to the highest of all possible signal values of the  $R$ ,  $G$  or  $B$  band, with condition that linear photo-response of the RGB sensor is ensured. Depending on the  $S$ -value, two situations are analyzed - if two colour band signals are registered simultaneously (i.e.  $B$  and  $G$ ,  $G$  and  $R$  or  $B$  and  $R$ ), or if the signals are registered only at one colour band - and after logical analysis the spectral interval of the pixel-registered radiation is identified. Further each spectral image is formed from the pixels or pixel groups that correspond to a particular selected spectral range. A device for multi-spectral imaging to implement this method comprises a multi-spectral light source, objective-equipped digital RGB sensor, RGB data set storage device, convertor for converting the RGB data into a set of spectral intensities in accordance with the selected signal discrimination level, selector of images for selecting the images related to each particular spectral band, and the output device, e.g. PC-monitor.

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Citation (search report)  
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