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[Continued on next page]

- (54) Title: METHOD OF DETECTING LOGOS, TITLES, OR SUB-TITLES IN VIDEO FRAMES

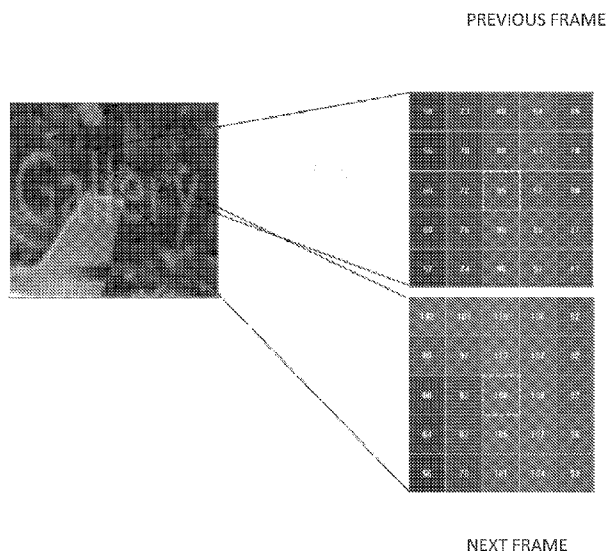


Figure 1

(57) Abstract: Detecting a static graphic object (such as a logo, title, or sub-title) in a sequence of video frames may be accomplished by analyzing each selected one of a plurality of pixels in a video frame of the sequence of video frames. Basic conditions for the selected pixel may be tested to determine whether the selected pixel is a static pixel. When the selected pixel is a static pixel, a static similarity measure and a forward motion similarity measure may be determined for the selected pixel. A temporal score for the selected pixel may be determined based at least in part on the similarity measures. Finally, a static graphic object decision for the selected pixel may be made based at least in part on the temporal score.



SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06T 7/00; G06K 9/64; H04N 7/12; G06K 9/00; H04N 5/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: "Detect, static object frame, pixel, correlation, difference, gray, level, logo, title, video, frame"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010-0166257 A1 (GORDON F. WREDENHAGEN) 01 July 2010 See abstract, figures 2,5, paragraphs [0021], [0026]-[0027], [0034]-[0042],	1-5,7,9-15,17
Y	[0047]-[0049], [0060]-[0062], and claims 1-2,10-11.	,19-25,27,29-30 6,16,26
Y	US 2005-0078223 A1 (SHAN LIU et al.) 14 April 2005 See abstract, figure 4, paragraphs [0020]-[0022],[0038]-[0039],and claims 1-2.	6,16,26
A	US 7483484 B2 (LIU SHAN et al.) 27 January 2009 See abstract, figures 4,5, column 2, line 66 - column 3, line 3, column 5, line 11 - column 6, line 23, column 6, lines 25-43 and claims 1-3.	1-30
A	US 2007-0195993 A1 (CHAO-HO CHEN et al.) 23 August 2007 See abstract, figure 4, paragraphs [0017]-[0019],[0076], and claims 1-4.	1-30



Further documents are listed in the continuation of Box C.



See patent family annex.

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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