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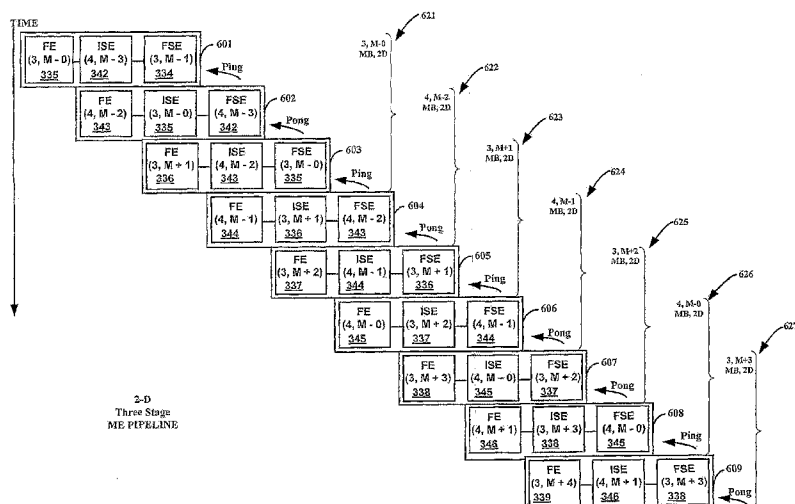
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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

(54) Title: MULTI-DIMENSIONAL NEIGHBORING BLOCK PREDICTION FOR VIDEO ENCODING



(57) Abstract: The motion estimation techniques and video encoding device(s) described use a two dimensional pipeline to generate accurate motion estimation parameters for a current video block. The two dimensional pipeline uses previously calculated motion estimation parameters of relevant neighboring video blocks, including a preceding video block on a same row as the current video block, prior to the generation of the accurate motion vectors, motion vector predictors, and mode decision of the current video block. The use of the two dimensional pipeline allows accurate motion vector prediction from neighboring video blocks previously not available, in the computation of motion vectors. Three engines may be used in the two dimensional pipeline, a fetch engine, an integer search engine and a fractional and spatial search engine. While the fetch engine and fraction and spatial search engine operate on one row, the integer search engine operates on another row.

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B. FIELDS SEARCHED

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CHUAN-YU CHO ET AL: "An embedded merging scheme for H.264/AVC motion estimation" PROCEEDINGS 2003 INTERNATIONAL CONFERENCE ON IMAGE PROCESSING. ICIP-2003. BARCELONA, SPAIN, SEPT. 14 - 17, 2003, INTERNATIONAL CONFERENCE ON IMAGE PROCESSING, NEW YORK, NY : IEEE, US, vol. VOL. 2 OF 3, 14 September 2003 (2003-09-14), pages 909-912, XP010669886 ISBN: 0-7803-7750-8 the whole document ----- -/--	1-28



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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	HUANG S-Y ET AL: "A simple and efficient block motion estimation algorithm based on full-search array architecture" SIGNAL PROCESSING. IMAGE COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 19, no. 10, November 2004 (2004-11), pages 975-992, XP004663483 ISSN: 0923-5965 page 976, left-hand column, paragraph 1 - page 978, right-hand column, paragraph	1-28
A	YANFEI SHEN ET AL: "Fast mode selection based on texture analysis and local motion activity in H.264/JVT" COMMUNICATIONS, CIRCUITS AND SYSTEMS, 2004. ICCAS 2004. 2004 INTERNATIONAL CONFERENCE ON CHENGDU, CHINA 27-29 JUNE 2004, PISCATAWAY, NJ, USA, IEEE, US, 27 June 2004 (2004-06-27), pages 539-542Vol11, XP010731803 ISBN: 0-7803-8647-7 the whole document	1-28
A	SCHIEFER P: "A novel VLSI-architecture for motion-estimation: the picture processing RAM" CIRCUITS AND SYSTEMS, 1992., PROCEEDINGS OF THE 35TH MIDWEST SYMPOSIUM ON WASHINGTON, DC, USA 9-12 AUG. 1992, NEW YORK, NY, USA, IEEE, US, 9 August 1992 (1992-08-09), pages 536-539, XP010057718 ISBN: 0-7803-0510-8 the whole document	1-28