



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/CA99/00308</p> <p>(22) International Filing Date: 16 April 1999 (16.04.99)</p> <p>(30) Priority Data: 09/061,723 17 April 1998 (17.04.98) US</p> <p>(71) Applicant (for all designated States except US): CAE ELECTRONICS LTD. CAE ELECTRONIQUE LTEE [CA/CA]; 8585 Cote de Liesse Road, St. Laurent, Quebec H4T 1G6 (CA).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): WOODS, Steve, C. [CA/CA]; 3550 - 45th Street, S.E., P.O. Box 8, Salmon Arm, British Columbia V1E 4N2 (CA). McGUIRE, Michael [CA/CA]; 3550 - 45th Street, S.E., P.O. Box 8, Salmon Arm, British Columbia V1E 4N2 (CA). OGLOFF, Harry [CA/CA]; 3550 - 45th Street, S.E., P.O. Box 8, Salmon Arm, British Columbia V1E 4N2 (CA). SKOCIC, Zvonimir [YU/CA]; 3550 - 45th Street, S.E., P.O. Box 8, Salmon Arm, British Columbia V1E 4N2 (CA). JOHNSON, Emeric [CA/CA]; 3550 - 45th Street, S.E., P.O. Box 8, Salmon Arm, British Columbia V1E 4N2 (CA).</p>	<p>(74) Agent: EDWARDS, Antony, C.; 206 - 347 Leon Avenue, Kelowna, British Columbia V1Y 8C7 (CA).</p> <p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 6 January 2000 (06.01.00)</p>	
<p>(54) Title: METHOD AND APPARATUS FOR IMPROVED INSPECTION AND CLASSIFICATION OF ATTRIBUTES OF A WORKPIECE</p>		
<p>(57) Abstract</p> <p>An apparatus for detecting the probable existence, location, and type of defects in a workpiece is described. The apparatus includes a sensor subsystem, an optimizer, a control subsystem, and a computer system having a processor and computer readable memory. Sensor subsystem senses a first section of the workpiece and produces signals corresponding to a physical characteristic of the workpiece. The computer system is configured to generate a workpiece model based on the signals produced by the sensor subsystem. In an alternate embodiment, a defect assembler can be provided to merge signals from a plurality of sensor subsystems. The defect assembler can also be configured to generate the workpiece data model. The optimizer is configured to generate workpiece segmentation recommendations based on the workpiece data model. The processor is configured with a first producer thread program which, in response to the receipt of a first set of signals by the computer system, receives a data subscription request from a subsystem which uses data and transmits the signals from the computer readable memory to the generator of the data subscription request. The processor is further configured to generate a second producer thread in response to a storage of a second set of signals in the computer readable memory. The second producer thread is configured to receive one of the data subscription requests and selectively send the second set of signals to the generator of the data subscription request. A tracking device for tracking selective kinematics of a workpiece moving through a plant is also disclosed. The tracking device includes an encoder wheel configured to tangentially contact a workpiece and rotate at an angular velocity coincident with the linear velocity of the workpiece. The tracking apparatus further includes a drive mechanism for driving the encoder wheel at a first angular velocity approaching the angular velocity of the encoder wheel which is coincident with the linear velocity of the workpiece. The tracking device also includes a signal generator configured to interact with the encoder wheel and generate a signal in response to the angular velocity of the encoder wheel. The tracking apparatus can be incorporated into the apparatus for detecting defects within a workpiece by providing the signal from the signal generator to the control subsystem.</p> <div data-bbox="1037 1232 1436 1948" style="text-align: right;"> </div>		

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 99/00308

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01N23/04 G01N23/18 G06T7/00 G01N33/46

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01N G06T

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	BRZAKOVIC D ET AL: "Designing a defect classification system: a case study" PATTERN RECOGNITION,US,PERGAMON PRESS INC. ELMSFORD, N.Y, vol. 29, no. 8, 1 August 1996 (1996-08-01), page 1401-1419 XP004008127 ISSN: 0031-3203	1,7
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 99/00308

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

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