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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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[Continued on next page]

(54) Title: HANDHELD FIELD MAINTENANCE TOOL WITH INTEGRATION TO EXTERNAL SOFTWARE APPLICATION

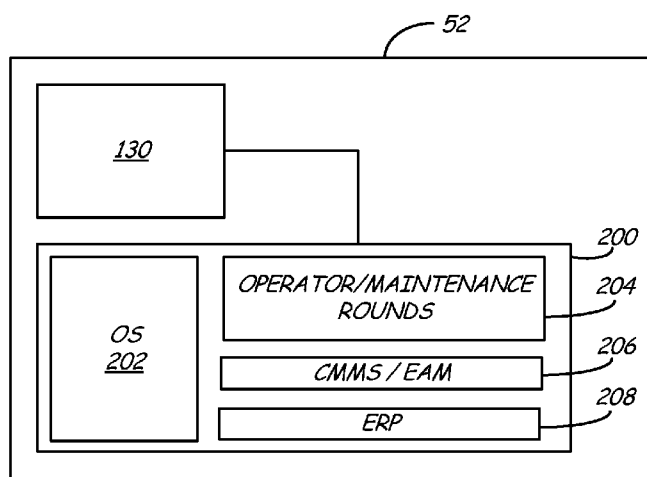


FIG. 4

(57) Abstract: An intrinsically-safe handheld field maintenance tool (52, 102) is provided. The tool (52, 102) includes a process communication module (121, 138) configured to communicate with a field device (22, 23, 104) in accordance with a process industry communication protocol. A controller (130) is coupled to the process communication module (121, 138) and is configured to provide at least one function related to maintenance of the field device (22, 23, 104). Program instructions embodied on a computer readable medium coupled to the controller, the program instructions causing the controller, when executed by the controller, to provide operator rounds functionality (204), CMMS/EAM functionality (206) and/or ERP functionality (208).

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER INV. G05B19/042 G05B19/418 G05B23/02 G06F1/16 ADD.		
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) G05B G06F		
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) EPO-Internal, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/164684 A1 (CHEN DEJI [US] ET AL) 28 July 2005 (2005-07-28) paragraph [0006] - paragraph [0009] paragraph [0023] - paragraph [0049] paragraph [0072] - paragraph [0073] paragraph [0080] - paragraph [0093] figures 1,2,7-15 -----	1-6
X	EP 2 077 473 A1 (FISHER ROSEMOUNT SYSTEMS INC [US]) 8 July 2009 (2009-07-08) the whole document -----	1-4,6
X	US 2002/004370 A1 (STENGELE FLORIAN [DE] ET AL) 10 January 2002 (2002-01-10) the whole document ----- -/-	1-3,6
☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "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 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family		
Date of the actual completion of the international search 23 March 2012		Date of mailing of the international search report 29/03/2012
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Orobitg Oriola, R

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International application No
PCT/US2011/045673

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 382 418 A (FISHER ROSEMOUNT SYSTEMS INC [US]) 28 May 2003 (2003-05-28) the whole document	1-6
A	----- EP 1 515 208 A2 (FISHER ROSEMOUNT SYSTEMS INC [US] FISHER ROSEMOUNT SYSTEMS INC [US]; S) 16 March 2005 (2005-03-16) paragraph [0001] paragraph [0007] - paragraph [0018] figures 1-3	1-6
A	----- "475 Field Communicator - User's manual", EMERSON PROCESS MANAGEMENT, 1 August 2009 (2009-08-01), pages 1-114, XP007919976, US the whole document	1-6
X	----- WO 2009/024483 A2 (ENDRESS & HAUSER PROCESS SOLUT [CH]; DA SILVA NETO EUGENIO FERREIRA [C]) 26 February 2009 (2009-02-26)	7-19
Y	the whole document	20
Y	----- US 2009/030950 A1 (MANEVAL MICHAEL [DE] ET AL) 29 January 2009 (2009-01-29)	20
A	the whole document	7-19
Y	----- EP 2 026 256 A1 (SKIDATA AG [AT]) 18 February 2009 (2009-02-18) the whole document	20
A	----- US 2008/102754 A1 (HEINEMANN GERHARD [DE]) 1 May 2008 (2008-05-01) the whole document	19

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/045673

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-6

An intrinsically-safe hand-held field maintenance tool configured to communicate with a field device and to provide a function related to maintenance of the field device, characterised in that:
it provides operator rounds functionality.

2. claims: 7-11

An intrinsically-safe hand-held field maintenance tool configured to communicate with a field device and to provide a function related to maintenance of the field device, characterised in that:
it provides computerized maintenance management systems (CMMS) functionality.

3. claims: 12-20

An intrinsically-safe hand-held field maintenance tool configured to communicate with a field device and to provide a function related to maintenance of the field device, characterised in that:
it displays a remote inventory parameter relative to the field device.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2011/045673

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