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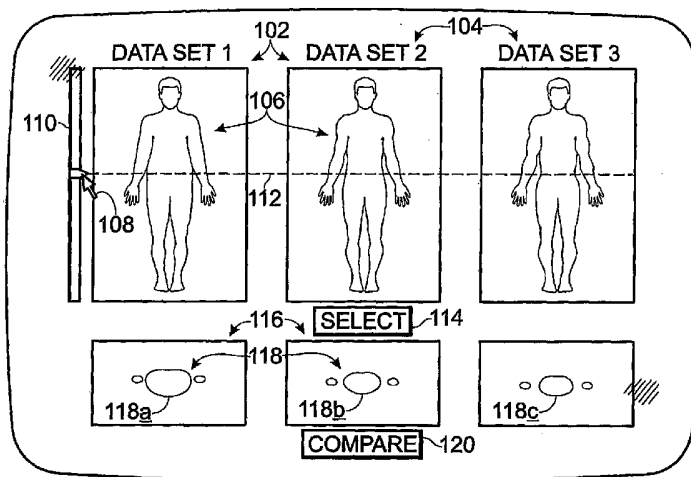
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[Continued on next page]

(54) Title: RELATIONAL MILLIMETER-WAVE INTERROGATING



(57) Abstract: Methods disclosed may include interrogating a subject (18) with millimeter-wave electromagnetic radiation, and generating data representative of a selected feature of a subject (18) may include serial comparative interrogating for processing. Serial processing may include first interrogating a given subject (18) at a first time, generating a data set from the first interrogating, second interrogating the subject (18) at a second time different than the first time, generating a data set from the second interrogating, and identifying information corresponding to a given feature of the subject (18) from each data set. Non-serial processing may include interrogating a subject (18), generating a data set from the interrogating, identifying information corresponding to a first feature of the subject (18), and identifying information corresponding to a second feature of the subject (18). Processing may also include comparing the information identified, and/or rendering representations (106) of the information identified and presenting the representations (106) rendered.



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Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

22 December 2005

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/12449

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G01S 13/00, 13/04

US CL : 342/22,27,42,43,51,90,192,197,173,176

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)

U.S. : 342/22,27,42,43,51,90,192,197,173,176

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 practicable, search terms used)

EAST (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,703,964 B2 (McMakin ET AL) 9 MAR. 2004, SEE ABSTRACT, FIGS.1 AND 6-9,	1-48, 51-56
---	COL. 1 LINE 40 - COL. 3 LINE 30	-----
Y		49-50
XP,	US 2004/0140924 A1 (KELLER ET AL) 22 JUL. 2004, SEE ABSTRACT, FIGURES 11-18,	1-48, 51-56
---	COL. PAGES 1-3.	-----
Y		49-50
A	US 2004/0012398 A1 (BAILEY ET AL) 22 JAN. 2004. SEE ABSTRACT, FIGURES 5-9	49-50
XP	US 6,831,590 B1 (STEINWAY ET AL) 14 DEC. 2004, SEE FIGURE 1 AND 3.	41- 42, 44-47, 51-52,
---		54-55
Y		-----
		43, 48-53, 56
Y	US 6,057,761 (YUKL) 2 MAY 2000, SEE ABSTRACT, FIGURES 1, 6A-7B	7,10-11, 21, 24-25, 31,
		33, 38, 40, 45, 47, 48-50

☒ 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 application or patent 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

26 August 2005 (26.08.2005)

Date of mailing of the international search report

17 OCT 2005

Name and mailing address of the ISA/US

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CORRECTED
VERSION

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/12449

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:
Please See Continuation 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 fee, this Authority did not invite payment of any additional fee.
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.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORTInternational application No.
PCT/US05/12449**C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,094,472 (SMITH) 25 JUL. 2000, SEE ABSTRACT FIGURES 1-10	1-56

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/12449

BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-40, drawn to performing interrogating events for a given surface at different times and comparing or obtaining information from each event.

Group II, claim(s) 41-56, drawn to interrogating a subject with radiation and identify a first and second features corresponding to the subject.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the two inventions do not relate to the same general inventive concept, inventions of the group I require multiple interrogation events at different times, wherein group II does not require the multiple events. Further, group I requires information from the different events, wherein group II obtains information from a single interrogation.