

(21) Application No 9800135.7	(51) INT CL ⁶ G07C 9/00 , A61B 5/00
(22) Date of Filing 06.01.1998	(52) UK CL (Edition Q) G4H HTD HTG H1A H13D H14A H14B G1N NEAX N19B2Q N19X7 N30P0 N30P2 N30P6 N30P8 N30P9 N30R U1S S1054 S1055 S1056 S1057 S1059 S1725 S1742 S2142 S2145 S2170
(71) Applicant(s) Torche Clinical Consultancy Ltd (Incorporated in the United Kingdom) 1 Elm Road, KINGSTON-UPON-THAMES, Surrey, KT2 6HR, United Kingdom	(56) Documents Cited GB 2312066 A GB 2285135 A GB 2229844 A GB 2207786 A WO 95/26013 A1
(72) Inventor(s) Michael Francis D'Souza	(58) Field of Search UK CL (Edition P) G4H HNHE HTG INT CL ⁶ G07C
(74) Agent and/or Address for Service Michael Francis D'Souza 28 Albany Park Road, KINGSTON-UPON-THAMES, Surrey, KT2 5SW, United Kingdom	

(54) Abstract Title
Measuring physiological data and identifying persons

(57) Three linked devices are presented which combine to create unique time-based identity numbers and record ambient physiological changes. The latter can be telemetrically transmitted as an identity checker or displayed visually in the form of electronic jewellery.

DIAGRAM A

The AutoReceptionist©

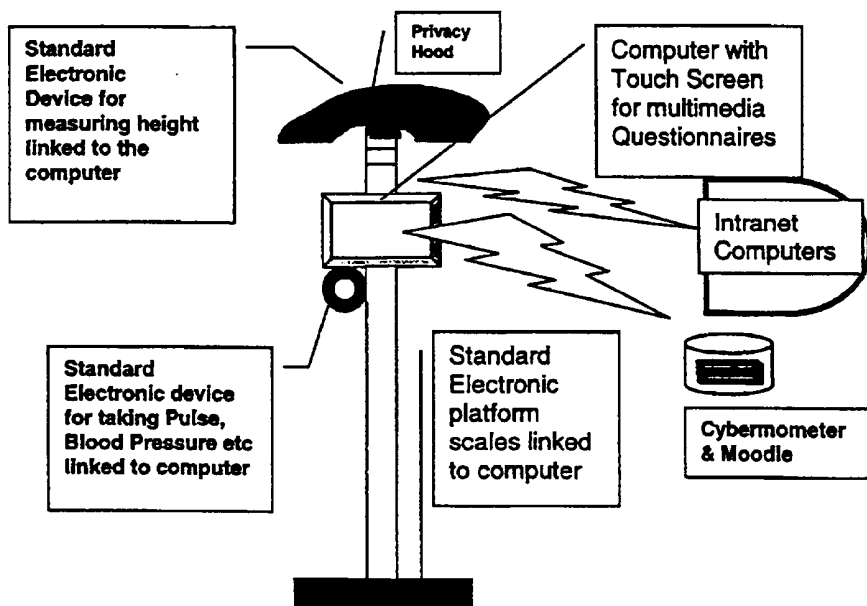
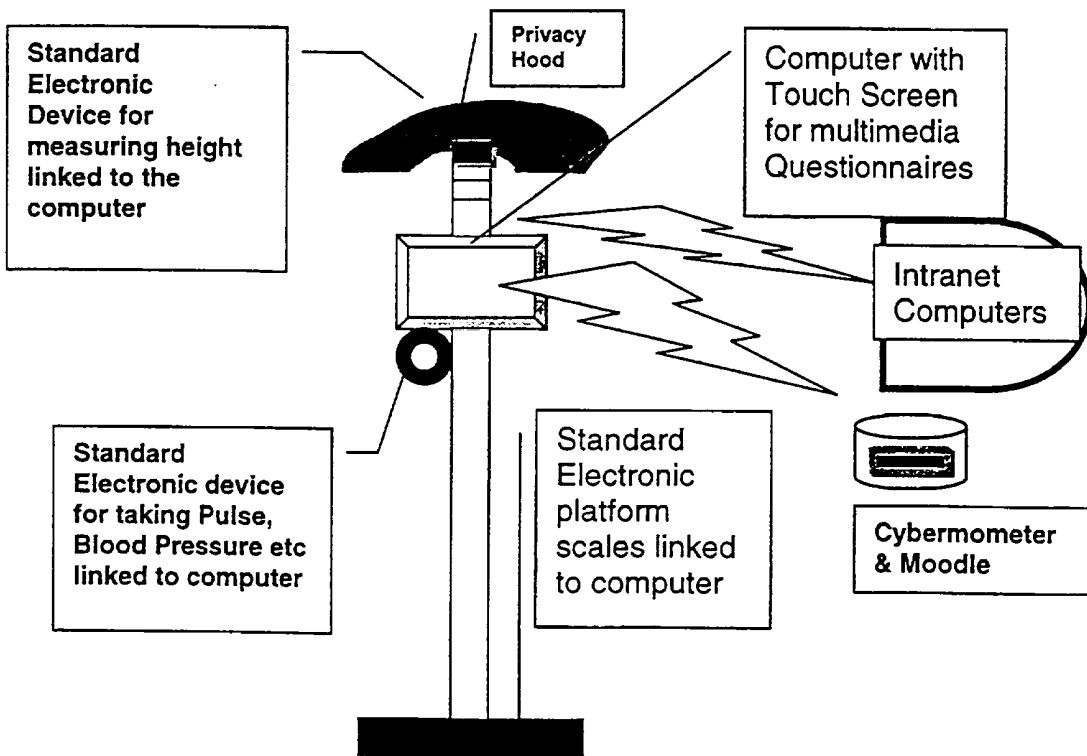


DIAGRAM A

The AutoReceptionist©



TORCHE's Cybermometer©, Moodle©, AutoReceptionist©, ZERO-2000© and LoopCheck© -

This invention relates to a combination of new computer linked mobile and stationary apparatus for identifying subjects, recording their physiological balance and then transmitting or displaying it.

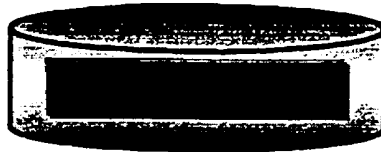
1. The mobile apparatus is a form of personally worn electronics which records the balance of a variable range of a subject's physiological measurements e.g. temperature, pulse rate, skin resistance, (and alpha-waves) This is the **Cybermometer©**. It has the additional capacity of transmitting these to computer receivers nearby and visually displaying the record as a composite colour mix via a small "smart badge", ring or other form electronic jewellery or clothing. This is the **Moodle©**.
2. The stationary apparatus is termed the **AutoReceptionist©** This does the following :
 - enumerates subjects with a unique **Zero-2000©** identifying code to incorporate into his **Cybermometer©** or to electronically tag him.
 - Measures a range of features such as the Blood Pressure, muscle tone, weight, height Digitised facial, Fingerprint and retinal Photographs. (N.B. Alpha waves and other data such as subjective perceptions of quality of life or usefulness of interventions may be incorporated and later the separately recorded personal genome may be added to the central identification dataset)
 - Communicates with large high security Intranet servers and uses a continuously fed-back recorded loop from the **Cybermometer©** to substitute for a password. This is the **LoopCheck©**

1. The Cybermometer©

This device uses standard tools for measuring pulse, temperature and skin resistance. The recordings from these are then telemetrically transmitted to a stationary computer receiver again using slightly modified standard equipment. Temporary recorders may be applied via Velcro straps to the wrist of subjects. The whole device may also be incorporated in a ring, which may continuously display the record in a multicoloured form. See **Moodle©** below.

1a The Moodle electronic jewellery

This electronic system actively displays the telemetric recording and becomes incorporated into jewellery such as a ring or brooch. (N.B. The active display of mood may create therapeutic social interactions similar to wearing mourning clothing.)



2 The AutoReceptionist©

This is a wall mounted or free standing booth designed principally for used in General Practice but may be modified for other settings such as hospitals etc. It identifies, checks in and selectively questions and measures subjects. It also issues identification and is the receiver for the cybermometer telemetrics.

2a The Zero-2000© Enumerator

It is frequently required, in making surveys and analyses in commerce, medicine and other social contexts, to allocate a unique number to a subject person. Simple sequential numbers held by a central office do not present any substantial difficulties for relatively small populations, but it is more difficult to obtain a satisfactorily unique enumeration system when very large global populations are involved.

In accordance with the present invention, an apparatus is provided which both reads and creates a unique number. This is done by device which records the exact time from the start of the year 2000 AD derived from a series of standard (e.g. Junghans) radio-controlled clocks incorporated into uniquely identifiable computers. The record of the date will be in the format of **three** fields for day of year e.g. 001 to 365(6) and **four** fields for year e.g. 2000. (Current computers, which allocate only six date fields, could be used temporarily by allocating only three fields to the year date thus solving some of the difficulties of the Millennium bug). The time of the day will be recorded in seconds in **five** fields 00001 to 86400.

This device will combine its own unique computer's number and the current date/time to create the unique ZERO-2000 number for allocation to each subject. Once created this number can be stored in electronic devices worn or carried by the subject and transmitted to computer receivers by telemetry. (Its passive storage can be achieved by an invisible micro-magnetic tattoo of this unique number in the dermal layer of a subject or by standardised electronic tagging devices used in zoological research). Other data on the subject can be appended to this ZERO-2000 number via the same computer and all transmitted and backed up on large central Intranet servers.

An example of apparatus embodying the invention will now be described with reference to the accompanying drawings, which is a diagrammatic representation of a computer network linked to an AutoReceptionist© booth programmed for the purpose of the invention to automatically read, temperature, pulse rate, skin resistance, Blood Pressure, muscle tone, weight, height digitised facial, Finger print, iris and or retinal Photographs. A smart ring which also reads ambient temperature, pulse rate, skin resistance and alpha-waves and telemetrically transmits them as well as presents them in ever changing multicoloured visual form on a Moodle© display screen on the face of the ring.

In the drawing A, the AutoReceptionist computer (1) has a Liquid Crystal Display Touch screen. The Cybermometer /Moodle (2) links to it via standard infrared systems. This computer (1) is a dedicated rugged instrument *for use only for the purpose of the invention*. Its number is rendered unique by being issued as a zero2000 number itself by the central server 3. The computer is programmed to present its own number and date/time device. It is instructed to block transmission if it detects the clock either to be broken or to be in the process of receiving its once every 24-hour radio time correction. Subjects can add demographic and other identifying data via the touch screen. This data is transmitted to the central server 3 via a secure Intranet.

In Diagram A the smart ring recording device and the reader (2) are further displayed. The 18 digit number is recorded on the smart ring.

An example number is 201086398 2015 00060 The first 9 digits are the computers own number indicating it was allocated this by the central reference server in the year 2010 at two seconds to midnight. The second 9 digits are based on the reading from its own radio-clock when it allocated a number to a subject in the year 2015 at one minute past midnight. These large numbers then may be further electronically compressed.

(a) The LoopCheck© Identity device

The theft of identity is liable to become a growing concern in future yet systems for checking this can become tedious to use in routine social intercourse. This section outlines how the former inventions are combined to create an electronic identity device. A reference sample of the subject's telemetric Cybermometry © readings of physiological state are picked up by a local computer and sent on via a high security intranet for storage in a data ware house together with a source of backup identification such as a digital photographs and finger-prints obtained at the time of registration. Until this critical authentication has been done subjects will only receive low security temporary registration.

The properly authenticated subject's ambient telemetry is then continuously recorded and sampled on a loop recorder in the monitoring environment which is linked to the intranet server. The precise periodicity of each separate measurement together with its interactions with the other measurements on this loop record is constantly checked for congruence with the reference sample held on the server. When the current loop recording becomes statistically incongruent with the reference record and with previous ambient samples, the system will demand higher levels of identification before accepting the current identity as being valid. These LoopCheck© devices could act as identity transmitters for personnel entering any environment eliminating the use of passwords and other keys, which may be forgotten, stolen or obtained by force.

CLAIMS

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According to this invention the use of this combination of apparatus makes it possible to obtain enumeration data and continuously validating personal identification for huge populations which is unique and more accurate and reliable than with previous methods, whilst the apparatus is simpler for the subject to use and less fatiguing, which also conduces to permit such uniquely labelled and continuously re-identified subjects to gain safe access to electronic machines with much greater ease, improved accuracy and security.

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Application No: GB 9800135.7
Claims searched: The

Examiner: Mike Davis
Date of search: 11 March 1998

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.P): G4H (HTG, HNHE)

Int Cl (Ed.6): G07C

Other:

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2312066 A (DRAGERWERK)	The
X	GB 2285135 A (HEWLETT-PACKARD)	"
X	GB 2229844 A (NRDC)	"
X	GB 2207786 A (MAN)	"
X	WO 95/26013 A1 (3M)	"

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.

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E Patent document published on or after, but with priority date earlier than, the filing date of this application.