

ALERTNESS TESTER**CROSS-REFERENCE TO RELATED APPLICATIONS**

This application claims priority from U.S. Provisional Patent Application Serial No. 60/042,577, entitled Alertness Testing System, filed Apr. 2, 1997, which is incorporated herein by reference. Also incorporated herein by reference is U.S. Provisional Patent Application Serial No. 60/058,841, entitled Brain Function Tester for All Ages, filed Sep. 15, 1997. Also incorporated herein by reference are the following disclosure documents filed with the U.S. Patent and Trademark Office: No. 394,198, entitled Special Purpose Computer System for Alertness and Readiness Testing, filed Mar. 4, 1996; No. 383,562, entitled Multilingual Software and its Use in Dedicated Computer System Used for Alertness and Readiness Testing, filed Mar. 11, 1996; No. 399,622, entitled Software and Hardware System to Test Alertness and Fitness, filed Jun. 6, 1996; No. 405,957, entitled Nonlinguistic Turnkey Test System for Mental Alertness and Awakeness, filed Oct. 16, 1996; No. 422,723, entitled Alertness Testing System with Alertness Gauge, filed Aug. 6, 1997; and No. 423,524, entitled Medical, Visual and Psychomotor Testing System, filed Aug. 21, 1997.

FIELD OF THE INVENTION

The present invention relates generally to the field of alertness testing, and more specifically to a system for implementing non-linguistic testing procedures for establishing and remotely recording a baseline level of alertness intended for comparison to a given test result.

BACKGROUND OF THE INVENTION

Accidents in the workplace cost many millions of dollars, hundreds of lives, and damage to the environment every year. The majority of these accidents are caused by human error. Human error has, of course, many causes, but it is most prevalent when an operator is impaired from lack of sleep, illness, or is under the influence of drugs or alcohol. In the U.S., 7.5 million workers in high-risk occupations are required to take random blood or urine tests to deter the use of drugs and alcohol on the job, a requirement which has helped reduce accidents. However, fatigue, illness and stress are more common causes of impairment than are the effects of drugs or alcohol. Accidents continue to occur in large part because workers are impaired by exhaustion, stress, side-effects from prescription medications or from a combination of these factors. There is therefore an urgent need for a way to screen workers for all impairment factors and causes before they begin work. Screening of this kind should be sensitive to impairment regardless of its cause, should be simple and quick, and should insure the maintenance of worker privacy.

SUMMARY OF THE INVENTION

The present invention addresses these concerns with a reliable and economical alertness tester which is easy to use and protects user privacy. The inventive tester preferably comprises a compact, single-purpose computer which can be hung on a wall, installed in a booth or mounted in an instrument panel. The inventive tester provides a standard for checking worker alertness which can be utilized throughout an industry or among entities nationally and internationally.

The present invention therefore comprises a system to assess a user's level of alertness or mental fitness by using

computer-delivered tests and a personal data device (preferably a Smart Card, but referred to generally as a datacard). The datacard preferably permits or prevents the use of or access to equipment or work areas, depending on the person's level of alertness. The tester preferably maintains personal privacy by retaining test performance and baseline information only on each user's own datacard, which each user carries as personal property. Preferably, no personal data is retained in any computer, database or tester. Personal data are retained only on a user's own datacard, thereby maintaining user privacy. Each user's own personal level of test performance is coded into their own datacard. When a test ends, any performance data temporarily retained by the tester's memory is preferably automatically erased.

It is therefore an advantage of the present invention to provide a system and method for testing the alertness of a user, the system comprising, a microprocessor, a visual display apparatus in electrical communication with the microprocessor, a data I/O port in electrical communication with the microprocessor, a portable data storage device having a user data memory, the portable data storage device being releasably interfaceable with the data I/O port, thereby enabling data downloading to and data uploading from the microprocessor, a test memory in electrical communication with the microprocessor, the test memory being loaded with at least one executable software program comprising a user alertness test and a passing data set, the user alertness test comprising test information displayed on the visual display, an input mechanism in electrical communication with the microprocessor for receiving input data from the user in response to the test information displayed on the visual display, the microprocessor thereby being enabled to receive user data from the user data memory, receive the test data from the test memory, display the test information on the visual display, receive the input data from the user via the input mechanism, compare the input data to the passing data set, and assign either of a selected test performance-pass and a test performance-fail signal to the user depending upon the result of the comparison.

BRIEF DESCRIPTION OF THE DRAWINGS

The aforementioned advantages of the present invention, as well as additional advantages thereof, will be more fully understood hereinafter as a result of a detailed description of a preferred embodiment when taken in conjunction with the following drawing in which FIG. 1 illustrates a front view of the tester of the present invention.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

Referring to FIG. 1, alertness tester **10** of the present invention comprises a computer, preferably, but not necessarily, a single-use device, which calculates a user's score on an alertness test and determines if the score is high enough to pass. A score must be at or near their baseline score to pass. If the user passes the test, then a pass code, plus the time and date, are written onto the user's ID card, referred to as a datacard **20**.

A preferred test, implemented as software executable on the tester, preferably resembles a simple video game, and is completed quickly by a user (about one minute, preferably less). If a user performs particularly well on a given day, he or she preferably is provided an early exit and passing score after a shortened test period. A user's test result is preferably displayed on the screen before datacard **20** is removed, allowing the user to retake the test immediately if he or she