CogSpeed™

"COGNITIVE RISK ASSESSMENT FOR CONTINUAL ACCESS AUTHORIZATION"

THE NEEDS

COGNITIVE RISK ASSESSMENT

Currently, access to secure areas is limited to identity verification. But what if the person at the door or signing out a commercial vehicle is extremely fatigued, on drugs, or drunk? How would you know? How would you rapidly and effectively evaluate them to deny access to high value assets or prohibit operation of a vehicle? - especially if the gateway is unguarded. Modern security procedures need to assess cognitive integrity along with identity. But the goal of ensuring performance ability prior to granting access is believed unattainable. This needs to change!

PROTECT EVERY AREA NEEDING PERFORMANCE ASSURANCE

An extremely wide range of high-value assets go unprotected from the threat of human error, right now! There are countless examples of operators needing cognitive evaluation prior to receiving access authorization, such as:

- Truck drivers, mariners, pilots, engineers
- Nuclear control personnel
- Construction Workers
- Power plant employees
- Refineries/oil field workers
- Financial managers

- Security guards
- Medical staff
- Computer operators
- Emergency responders
- Military troops
- Athletes

CONTINUAL ASSESSMENT AND INSTANT REPORT OF CAPABILITY

What If after access is granted the person becomes too fatigued or takes a pain medication and is unable to function safely? Cognitive risk assessment needs to be done throughout the work cycle as often as necessary - at the job site, on the vehicle — anywhere. And then, management must be rapidly notified to take effective corrective action.

THE SOLUTION

Now, instead of just verifying personal identity, a revolutionary technology is being developed to authorize access to any sensitive area based on a person's mental fitness to perform their job safely and efficiently, throughout their duty cycle. Functioning like a "speedometer for the brain," *CogSpeed* quickly and accurately measures instantaneous information processing speed, which is closely associated with how well one can perform complicated real-world tasks. If processing speed is below normal, it indicates a high risk of performance impairment.

THE CUTTING EDGE PRODUCT - *CogSpeed*

A SINGLE TOOL SENSITIVE TO FIVE CAUSES OF COGNITIVE IMPAIRMENT

- Fatigue
- Legal, prescription, and illegal drugs
- Alcohol
- Brain trauma/Concussion
- Aging

FIVE INTEGRATED COMPONENTS

- *CogSpeed* **Reliability Test -** Download to any mobile device
- **Gray Matter Metrics Database -** permanent, secure storage of all results, including geolocation

- **E-mail Alerting System**. - instant notification of cognitive impairment
- **Human Risk Assessment Monitor -** Immediate display of the cognitive status of the entire workforce
- **Control Portal -** Efficient user enrollment and account management

SOPHISTICATED HUMAN FACTORS DESIGN PRINCIPLES
- Specifically developed for real-time monitoring in the real world
- Minimal intrusion - fast results in about 45-90 sec
- Easy to learn no language requirement, and culture-free
- Works on any mobile device, anywhere
- Repeated testing as often as the situation demands
- Adaptive algorithm detects faking
- Password-protected login
- Real-time management involvement in corrective action

THE VALUE PROPOSITION
BENEFITS AND COST SAVINGS
- Save lives and avoid accidents
- Reduce human error and improve performance
- Lower risk of personnel initiated security mistakes
- Avoid costly equipment loss and damage
- Immediate, simple, inexpensive drug and alcohol screening
- Motivate improved rest and health habits
- Support big data analytics for operational decisions
- Minimize lawsuits and lower legal fees
- Reduce liability exposure for lower insurance costs
- Improve corporate image with pro-active enhancement of public safety

THE BUSINESS MODEL
Providing software as a service (SaaS), unlimited cognitive testing, complete data storage, impairment alerts by e-mail, and data visualization is less than a dollar a day per employee. After field testing, the product will be marketed at trade shows and by direct sales calls to appropriate industries.

Combining minimum overhead, high ROI, and advanced, proprietary technology, *Cogspeed* has the potential to create and dominate the world market for behavior-based biometrics for access control.

There is also a vast opportunity to provide self-awareness information to the consumer. Many would like to know if their cognitive capability has declined due to fatigue, drugs, or alcohol. In any personal situation where people are just curious, or if they need a reliable indicator of their limitations, *CogSpeed* can help. In addition, it has uses in monitoring progress of senility or medication effects at nursing homes and by family members, and initial concussion screening for athletes can be performed right on the playing field. Consumer marketing will be conducted through the web and on social media.

BACKGROUND
Layne Perelli, Ph.D., developed the original technology to provide an objective assessment of fatigue levels in Air Force pilots during wartime. The test was statistically validated in his doctoral dissertation in 1980. He was subsequently awarded Patent #4464121 in 1984 to incorporate it into a portable device, not unlike an iPad. However, further development had to wait until today's internet and sophisticated mobile devices were available to bring a practical, affordable, product to the marketplace.

Dr. Perelli founded Gray Matter Metrics, LLC, in 2013 to produce device and has since created significant refinements to the algorithm.

HOW IT WORKS

CogSpeed testing usually requires 45 to 90 seconds of an employee's time so there is minimal interference with work. The adaptive test algorithm yields highly accurate results. The test is independent of language to facilitate world-wide adoption by all nationalities. It's been rigorously designed to be easy to learn and use by anyone, in any environment. The software runs on most touch-screen mobile devices and smart phones. After download, testing can even be conducted in a stand-alone mode, without internet or cellular connection.

As you take the test, your brain enters into a relation with the computer processor to hunt for the fastest speed you can accurately process complex information. *CogSpeed* can tell if you are distracted, not paying full attention, or just responding randomly. Because of its sophisticated design, CogSpeed is hard to fool, so both false positives and false negatives are minimized. That is, a tired person can't fake being alert, and when wide-awake, it's not easy to appear fatigued. It will invalidate the test if your responses are unusable. Thus an individual producing a low *CogSpeed* score is highly likely to be cognitively impaired.

Initially *CogSpeed* allows you show how mentally competent you think you are at the moment. The computer keeps a complete running count of right and wrong responses, omissions, and response times, down to the millisecond. Next, *CogSpeed* takes control of the test to quickly hunt for the fastest examples of your actual cognitive processing ability. You now have to prove to *CogSpeed* that what you told it initially was correct.

Depending on how fast you are responding, it slows down up or speeds up until you can't keep up. Behind the scenes, *CogSpeed* runs internal checks and thousands of high-speed calculations, undetectable by the user, to make its evaluation.

After *CogSpeed* believes it has found its best estimate of your true performance capability, it calculates and displays your Cognitive Processing Index (CPI), a score from 0 to 100. A score less than 20 indicates potential cognitive impairment.

FREE TESTING OFFER

Contact **Gray Matter Metrics, LLC,** at **(210) 867-7172** or e-mail **info@graymattermetrics.com** to find out when CogSpeed will be available to deliver a revolutionary solution for your cybersecurity problems. Go to **graymattermetrics.com** to download CogSpeed for free testing of the basic version as often as you like. Your company may qualify for a free trial for any number of employees, risk-free. Full technical support provided. Explore the benefits CogSpeed can provide for your operations.

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