

Psychophysiological Touch Screen Stress Analyzer

**21st Century Investigative Analytical
Focus Technology**

U.S. Patents 8,264,346 ~ 8,502,691 ~ 8,847,778

“TSA Behavioral Analysts Are Only Slightly Better Chance” says the Government Accounting Office

The Transportation Security Administration has **spent \$900 million since 2007** to train **3000 behavior detection officers** at airports nationwide. *“The ability of humans to accurately identify deception based on behaviors is the same, roughly - essentially the same as chance - **slightly greater than chance - 54%**,”* Stephen Lord, director of the Office of Homeland Security, said in testimony on November 23, 2013 before a House subcommittee.



TSA's Ability to Detect Bombs

TSA conducted a study to determine their agents ability to detect bomb paraphernalia.

- **Agents at Los Angeles International failed to identify 75% of bomb components.**
- **Chicago O'Hare missed 60% of bomb components.**
- **San Francisco, run by private security, missed 20%.**
- **At Dallas Ft. Worth International an operator of a body scanner missed a gun strapped to an undercover TSA agent's leg.**



What is known is not good.

What is not known is even worse.

Bombs Implanted in the Human Body

Senior Saudi prince injured in suicide bombing

Aug 28, 2009

RIYADH, Saudi Arabia - A suicide bomber lightly wounded a senior prince largely credited for Saudi Arabia's anti-terrorism campaign when he blew himself up just before going into a gathering of well-wishers for the Muslim holy month of Ramadan, the state news agency said Friday.



It was the first known assassination attempt against a member of the royal family since Saudi Arabia began its crackdown on al-Qaida affiliated militants eight years ago following the Sept. 11 terror attacks in the United States.

There is no technology and can detect bombs implanted inside the human body.

Bosom bombers: Women have explosive breast implants

February 01, 2010

WorldNetDaily

LONDON – Agents for Britain's MI5 intelligence service have discovered that Muslim doctors trained at some of Britain's leading teaching hospitals have returned to their own countries to fit surgical implants filled with explosives, according to a report from Joseph Farah.

Women suicide bombers recruited by al-Qaida are known to have had the explosives inserted in their breasts under techniques similar to breast enhancing surgery. The lethal explosives – usually PETN (pentaerythritol Tetrabitrate) – are inserted during the operation inside the plastic shapes. The breast is then sewn up.

Similar surgery has been performed on male suicide bombers. In their cases, the explosives are inserted in the appendix area or in a buttock. Both are parts of the body that diabetics use to inject themselves with their prescribed drugs.

Explosive experts at Britain's Porton Down biological and chemical warfare research center told MI5 that a sachet containing as little as five ounces of PETN when activated would blow "a considerable hole" in an airline's skin which would guarantee it would crash.

Looming Threats in United Arab Emirates

“Muslim Brothers plotting overthrow of Gulf states”

By REUTERS 07/26/2012 13:03

Dubai police chief warns of “international plot” against Gulf states, says Iran, Syria and MB must know Gulf is a red line.



DUBAI - Dubai's chief of police has warned of an “international plot” to overthrow the governments of Gulf Arab countries, saying the region needs to be prepared to counter any threat from Islamist dissidents.

“There's an international plot against Gulf states in particular and Arab countries in general... This is preplanned to take over our fortunes,” Khalfan told reporters at a gathering late on Wednesday marking the Muslim holy month of Ramadan.

“The bigger our sovereign wealth funds and the more money we put in the banks of Western countries, the bigger the plot to take over our countries... The brothers and their governments in Damascus and North Africa have to know that the Gulf is a red line, not only for Iran but also for the Brothers as well.”

“I had no idea that there is this large number of Muslim Brotherhood in the Gulf states. We have to be alert and on guard because the wider these groups become, the higher probability there is for trouble,” Khalfan said on Wednesday.

“We are aware that there are groups plotting to overthrow Gulf governments in the long term.”

<http://www.jpost.com/MiddleEast/Article.aspx?id=278993>

Potential Threats in United Arab Emirates

UAE: Gulf must tackle Muslim Brotherhood threat

By REUTERS 10/08/2012 19:04

United Arab Emirates FM Sheikh Abdullah cautions Brotherhood threatening state sovereignty, urges cooperation against Islamists.

ABU DHABI - Gulf Arab countries should work together to stop Islamist group the Muslim Brotherhood plotting to undermine governments in the region, the United Arab Emirates' foreign minister said on Monday.

The UAE, a major oil exporter and business hub, has arrested around 60 local Islamists this year, accusing them of belonging to the Muslim Brotherhood - which is banned in the country - and conspiring to overthrow the government.

Last month, local media reported that some of those detained had confessed that their organization was running an armed wing and had been plotting to take power and establish an Islamist state. Al-Islah has since denied this.

The reports also said the group was coordinating with Brotherhood organizations in three other Gulf Arab countries, and that they had recently received up to 10 million dirhams (\$3.67 million) from a counterpart in another Gulf Arab country.

Al-Islah says it shares a similar ideology with the Muslim Brotherhood in Egypt but has no direct links and is pushing for only peaceful reforms.

Dubai's outspoken police chief Dhahi Khalfan said in March there was an "international plot" against Gulf states by the Muslim Brotherhood organization.



Photo: REUTERS/Jumana El-Heloueh

<http://news.yahoo.com/gulf-states-must-tackle-muslim-brotherhood-threat-uae-164546200.html>

1930's technology is not suitable for high throughput security screening

Polygraph

- Requires a quiet test environment.
- Subject must be absolutely motionless with 4 physical connections. The blood pressure cuff cuts off circulation and becomes painful after a few minutes and limits the number questions.
- Examiner is limited to only five tests per day and each test **must take at least 90 minutes.**
- Requires a highly trained examiner.
- **Too slow** and **too expensive** for high volumes of aviation or border traffic.
- Costs up to and over \$300.



1970's technology is unable to meet the need for high throughput security screening

Voice Stress Analysis

- Requires a quiet test environment.
- Testing and analysis **takes about 45 to 60 minutes.**
- Requires a highly trained examiner.
- **Too slow and too expensive** for high volumes of aviation or border traffic.
- Costs up to and over \$300.



***Today's Security Risk Screening Methodology
is Inadequate***

A large, crowded airport terminal with people in line and security personnel. The image is filled with a diverse group of people, many of whom are standing in lines or waiting. Several individuals are wearing blue uniforms, likely airport security or staff. The background shows typical airport infrastructure, including signs and overhead lighting. The overall atmosphere is one of a busy, high-traffic public space.

***A new
approach
is
needed!***

The 21st Century Proven Solution

Psychophysiological Touch Screen Stress Analysis

Arabic
عربي

German
Deutsch

Russian
Россию

Chinese
中文

Greek
Ελληνικά

Spanish
Español

Dutch
Nederlandse

Hebrew
עברית

English

Italian
Italiano

Filipino
Ingles

Japanese
日本

French
Française

Korean
한국어



U.S. Patent 8,264,346 granted on 9/11/2012

Unknown Threat Assessment

- The ***PTSSA System*** does not rely on finding the tools of smuggling and terrorism, ***such as weapons and non metallic bombs.***
- The ***PTSSA System*** strategically targets malicious intent and the person's attempt to hide it.



The Science of Measuring Emotions

Your Touch is a Good Indicator of Emotion.



Muscle Tremors...

The most common of all involuntary movements and can affect the hands, arms, head, face, vocal cords, trunk, and legs. *Most tremors occur in the hands.* A very common kind of tremor is the chattering of teeth, usually induced by cold temperatures or by *fear* and *anxiety*.

<http://pvsa.net/security-screening-brain-emotion/>

Sources: <http://pennstatehershey.adam.com/content.aspx?productId=117&pid=1&gid=003192> and http://www.ninds.nih.gov/disorders/tremor/detail_tremor.htm and <http://www.seattleneurology.org/postural-tremor.html> and <http://en.wikipedia.org/wiki/Tremor>

The **polygraph**, the **voice stress analyzer**, and **PTSSA's** evolutionary technology all measure the variance of muscle tremors cause by emotions.

Intellectual Property



US008264364B2

- The PTSSA technology was invented by Phil Sprague.
- Sprague is a security and law enforcement professional with over 40 years of experience.
- The PTSSA is covered under 3 US Patents #8,264,364 issued on 9/11 of 2012. Additional 8,502,691; 8,847,778.
- **There is nothing else in the world like the patented PTSSA two minute security risk screening technology.**

(12) **United States Patent**
Sprague

(10) Patent No.: **US 8,264,364 B2**
(45) Date of Patent: **Sep. 11, 2012**

(54) **PSYCHOPHYSIOLOGICAL TOUCH SCREEN STRESS ANALYZER**

OTHER PUBLICATIONS

(76) Inventor: **Phillip Roger Sprague**, San Diego, CA (US)

Jankovic J. Fahr S.: Physiologic and pathologic tremors. Diagnosis, mechanism, and management. *Ann Intern Med.* 1980;93:460-5. PMID 7001967.

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 347 days.

M. Manto, M. Topping, M. SOede, J. Sanchez-Lacuesta, W. Harwin, J. Pons, J. Williams, S. Skarup, L. Norme: Dynamically Responsive Intervention for Tremor Suppression *IEEE Engineering in Medicine and Biology Magazine*, 22-3, pp. 120-132, 2003.

(21) Appl. No.: **12/206,703**

E. Roccon, J.M. Belda-Lois, J. Sanchez-Lacuesta, J.L. Pons: Pathologica Tremor Management: modelling, compensatory technology and evaluation *Technology and Disability*, 16-, pp. 3-18, 2004.

(22) Filed: **Sep. 8, 2008**

E. Roccon, A.O. Andrade, J.L. Pons, P. Kyberl, S.J. Nasut, EMD: A novel technique for the study of tremor time series. *Medical and Biological Engineering & Computing*, 44-7, pp. 569-582, 2006.

(65) **Prior Publication Data**

US 2010/0060461 A1 Mar. 11, 2010

E. Roccon, J.A. Miranda, J.L. Pons, TechFilter: Filtering undesired tremorous movements from PC mouse cursor *Journal of Technology and Disability*, 18-, pp. 3-8, 2006.

(51) Int. Cl. **A61B 5/00** (2006.01)

Roccon E. Belda-Louis JM, Ruiz AF, Manto M, Moreno JC, Pons JL: Design and Validation of a Rehabilitation Robotic Exoskeleton for Tremor Assessment and Suppression. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*. 2007;15(3):367-378.

(52) U.S. Cl. **340/665; 600/301**

(58) **Field of Classification Search** 340/575.1, 340/665; 715/864; 600/301; 601/46, 48, 601/49, 148, 152

M. Manto, E Roccon, J.L. Pons, J.M. Belda-Lois, S. Camar: Evaluation of a wearable orthosis and an associated algorithm for tremor suppression. *Physiological Measurement*, 28-, pp. 415-425, 2007.

See application file for complete search history.

(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,855,416 A 12/1974 Fuller
3,855,418 A 12/1974 Fuller
4,600,807 A 7/1986 Kable
5,564,433 A 10/1996 Thornton
6,007,340 A * 12/1999 Morrel-Samuels 434/236
7,683,776 B2 * 3/2010 Glenn et al 340/531
8,033,996 B2 * 10/2011 Behar 600/500
8,199,018 B2 * 6/2012 Shigetou 340/573.1
2006/0244732 A1 * 11/2006 Geaghan 345/173
2008/0009393 A1 * 1/2008 Glusco 482/8
2008/0195980 A1 * 8/2008 Morris 715/864
2008/0221401 A1 * 9/2008 Derchak et al 600/301
2009/0281450 A1 * 11/2009 Reichow et al 600/538
2009/0295545 A1 * 12/2009 O'Haire et al 340/105

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(57) **ABSTRACT**

The Psychophysiological Touch Screen Stress Analyzer is capable of capturing information on how a person emotionally reacts to a series of verbal, visual, or written stimulus when the person touches the touch screen computer monitor in response to the stimulus.

7 Claims, 2 Drawing Sheets

The PTSSA System Accuracy is High

A group of Ph.D. forensic psychologists recently conducted an evaluation of the PTSSA System's ability to determine its reliability in determining when a subject is being truthful or less than truthful. All subjects in this study were in an alcohol/drug treatment program and must submit to frequent urine analysis.

Question 12: Do you believe you will test positive for alcohol?

Question 16: Do you believe you will test positive for illegal drugs?

The PTSSA System analysis of questions concerning the alcohol and drug program showed **92% accuracy** after testing 77 subjects. A scientific paper was published in the **International Journal of Clinical Psychiatry and Mental Health, 2014, 2, 70-76** with these results.

A second study was published of another 101 subjects showed a **92% accuracy**.

Adjustments were made to the PTSSA algorithm and achieved an **accuracy of 97%**.

See: <http://pvsa.net/clinical-studies-lie-detection/>

The PTSSA System Deterrent Factor

A L E R T

All persons past this point will be asked computer generated questions concerning the following issues...

Weapons

Smuggling Activities

Terrorism Activities

...your answers are reviewed & verified

Successful Field Acceptance Test

The PTSSA system was successfully tested in a real-world environment for 15 days in December 2010 at Nigeria's Murtala Muhammed International Airport in Lagos. More than 1,500 passengers were randomly selected and screened.

The PTSSA system identified 75 individuals involved in smuggling activities – by their own admissions – and 6 individuals involved in terrorist activities, by their emotional reaction indicators.

This testing process was monitored and observed by officials from the Nigerian Civil Aviation Agency (NCAA) and the Federal Aviation Administration of Nigeria (FAAN).



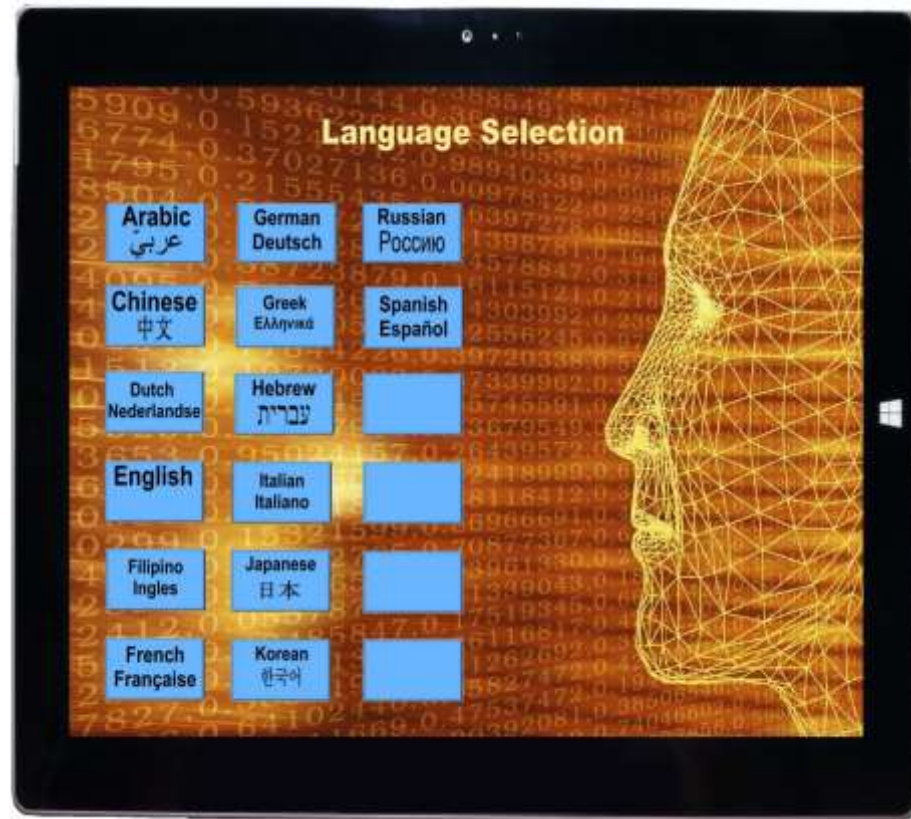
The PTSSA System

- Carefully constructed question sets are created to focus on specific topics of concern.
- An example of topics concerning Airport, Borders Crossing, Customs, and Ports of Entry are:
 - Weapons and WMD's
 - Smuggling
 - Terrorism
- *Custom question sets available.*

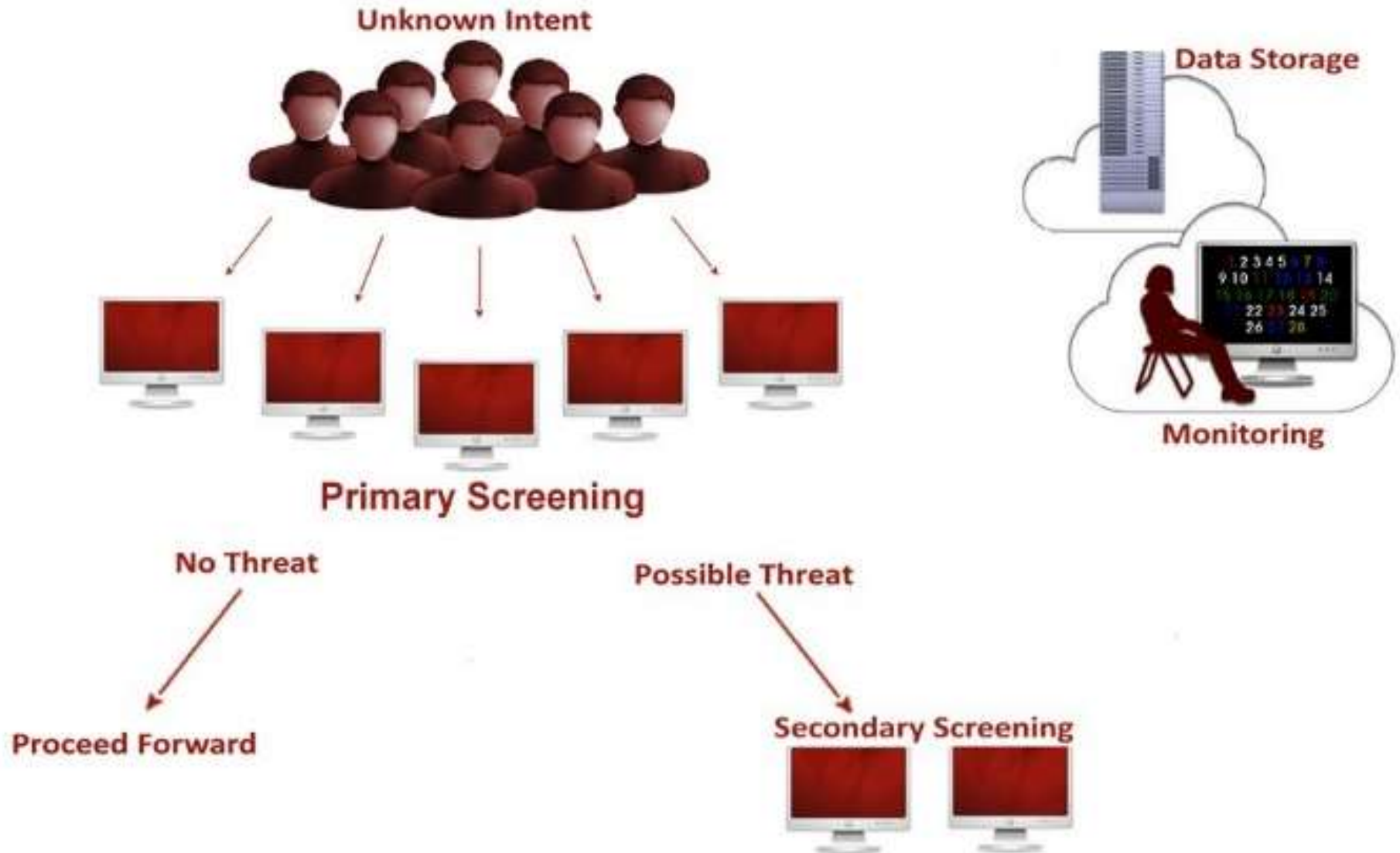


The PTSSA System Overview

- PRS, LLC offers an innovative *Investigative Focus Tool* for behavioral risk analysis.
- The *PTSSA System* is:
 - Multi lingual with audio assist
 - Fast – about 2 minutes
 - Accurate - over 92%
 - Does not require highly skilled technician
 - Objective and very low cost
 - Simple to interpret results

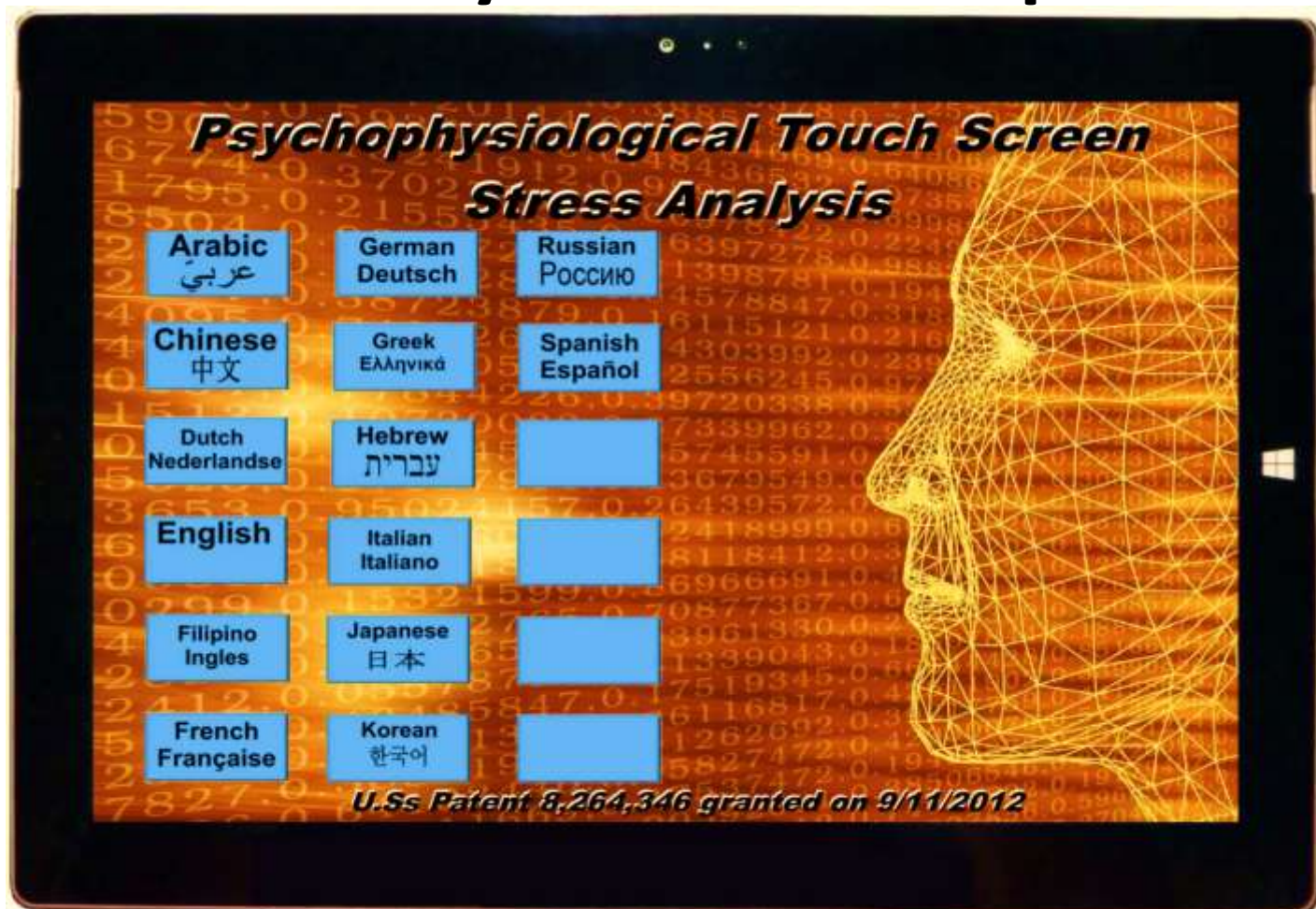


The PTSSA System is Expandable



The PTSSA System Applications

The *PTSSA System* questions can be tailored to address any number of topics.



Please Choose a Test to Activate

Airport Border
Customs T-G

Airport Border
Customs
SMUGGLING 2-G

Airport Border
Customs TERRORISM
3-G

Criminal Suspect-S

Witness or
Informant-S

Alcohol Drug Rehab
Program-G

Alcohol Illegal Drug
Test-G

Exposure Ebola Virus-
G

Armed Robbery-S

Assault-S

Murder-S

Sexual Assault-S

Money Theft-S

Theft Investigation-S

AUDIO ONLY Airport
Border and
Customs-1G

Adhoc Specific Test-S

Middle East Airport
Test-G

Islamic Extremists-G

Known Outcome-G

Prison Visitor-G

Spousal Fidelity-S

Sex Offender Initial
Test G

Sex Offender Periodic
Test G

Defrauding
Organization of
Assets-S

Additional Tests

Please Choose a Test to Activate

Disrupt Government
and Leaks Secrets-G

Leaking Government
Secrets-G

Disrupting
Government Activity-
G

Current Military-G

Recruit Military-G

Current Law
Enforcement-G

Recruit Law
Enforcement-G

Bomb Making
Involvement-G

Threats to a Specific
Person-G

PTSD Test-1G

PTSD Test-2G

Pre Employment
Omit Falsify-1G

Pre Employment
Omit Falsify-2G

Pre Employment
Investigate-1G

Pre Employment
Investigate-2G

Arabic: Weapons
Smuggling Terrorism

Photo LineUp-G

Dari-1: Taliban -
Coalition, Collecting
Info On Coalition

Dari-2: Police;
Bribery; Taliban
Supporter

Pashto-1: Taliban -
Coalition, Collecting
Info On Coalition

Pashto-2: Police;
Bribery; Taliban
Supporter

English 1: Taliban -
Coalition, Collecting
Info On Coalition

English-2: Police;
Bribery; Taliban
Supporter

BUTTON BLANK

Previous Tests

The Examination Architecture

The subject now answers 18 questions in a specialized examination architecture.

3 Adaption questions

1 Introduction topic question

3 Setup questions (Issue A**)**

3 Secondary questions (Issue B**)**

3 Primary questions (Issue C**)**

4 Stress reducing questions

1 Conclusion topic question

As soon as the examination is completed, Risk Analysis is displayed

Easy to Interpret Results

Psychophysiological Touch Screen Analyzer


RISK SUMMARY

	Low	Marginal	Caution	High
ISSUE A:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ISSUE B:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ISSUE C:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Touch Screen
PTSSA-4 2013-12-16 15:30.15

Progress **Read Time**
Question: 00 Seconds: 000

Subject: X214-1320
Client: US Govt 2308

 Detailed Results  next

This risk analysis indicates the subject needs further evaluation concerning “Issue C”

The PTSSA System Applications

When you need to know the answer to these 2 questions:

Do you know who was involved?

Are you in any way involved?

Immigrant Screening

Smuggling & Terrorism

Theft of Money

Theft of Property

Sexual Offenders

Robbery

Criminal Assault

Murder

Criminal Suspects

Witnesses & Informants

Friend or Combatant

Identify Islamic Extremes

Embezzlement

Insider Trading

Kidnapping

Extortion

Espionage

Release of Information

Identification of Moles

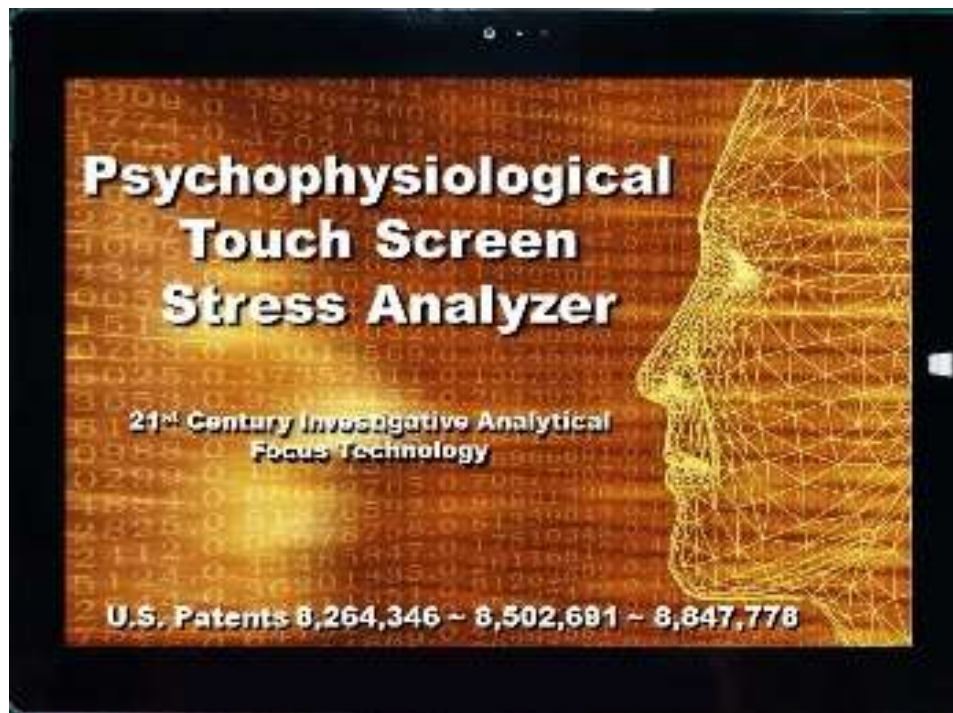
Identification of Foreign Agents

Involvement with Illegal Drugs

PTSD Assessment

These tests cover the basics and more as the need arises.

***In about 2 minutes, this unique 21st Century Technology
can help determine “What is or is not Truth”***



- **Does not require highly trained examiners**
- **Time – average 2.5 minutes testing**
- **Highly efficient for low or high volume screening**
- **Cost Effective – \$15 to \$95 per test**

The PTSSA System Deployment

- *The PTSSA System* provides security checkpoints with an accurate and unbiased Investigative Focus Tool.
- Utilize *the PTSSA System* part of a layered and multi-faceted security screening system.
- Enable effective use of resources, saving time, space, and cost.
- **Do not wait until it is too late!**

GLOBAL APPLICATIONS



Border Crossings



Security Check Points



Military



Airports

**For more information
about the PTSSA
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