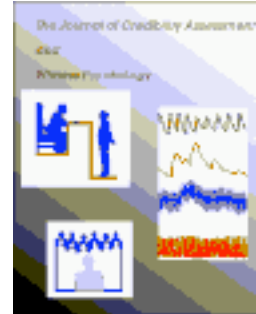


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## **Emerging Technologies in Credibility Assessment**

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## **Emerging Technologies in Credibility Assessment**

- TRACKER
- THERMAL FACIAL SCREENING (The Booth)
- Laser Doppler Vibrometry
- Future Prototypes

### **Eye Movement-based Memory Assessment (TRACKER)**



**TRACKER**

**Turnkey Remote Assessment of  
Concealed Knowledge using  
Eye-movement Recording**

 VERIDICAL  
RESEARCH & DESIGN

### Familiar/Unfamiliar Faces-Objects-Scenes

- Individual presentations of known and unknown faces, objects, or scenes

**Concealed**



**Group**



**Source Verification**



**Crime Scene**



**Relevant Objects**



**Locations of Interest**



### How would it be used to assess credibility?

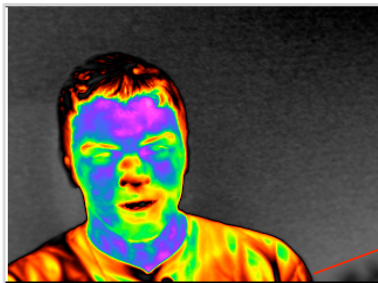
- Use of eye movement data to categorize prior knowledge of presented images of faces, scenes and objects
- Certain 'acquisition' patterns or fixation duration can contribute to designation of **prior knowledge or engaged behaviors**
- These measures can indicate whether the person is viewing the face/scene/object for the first time...or whether the image exists in the memory of the examinee

**Thermal Facial Screening-"The Booth"**

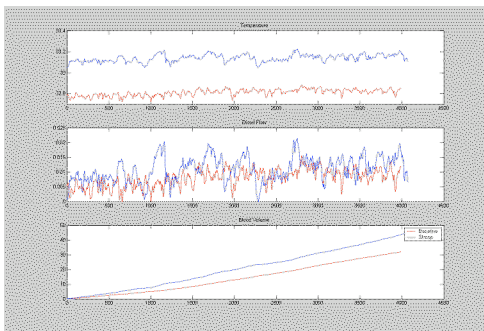
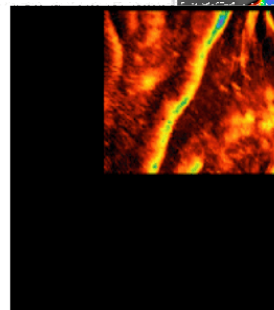
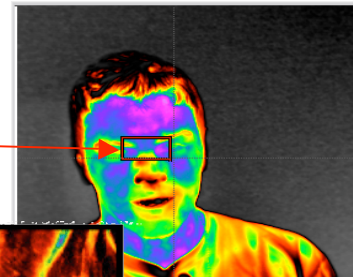


Research Division-DODPI

**How We Do It :**

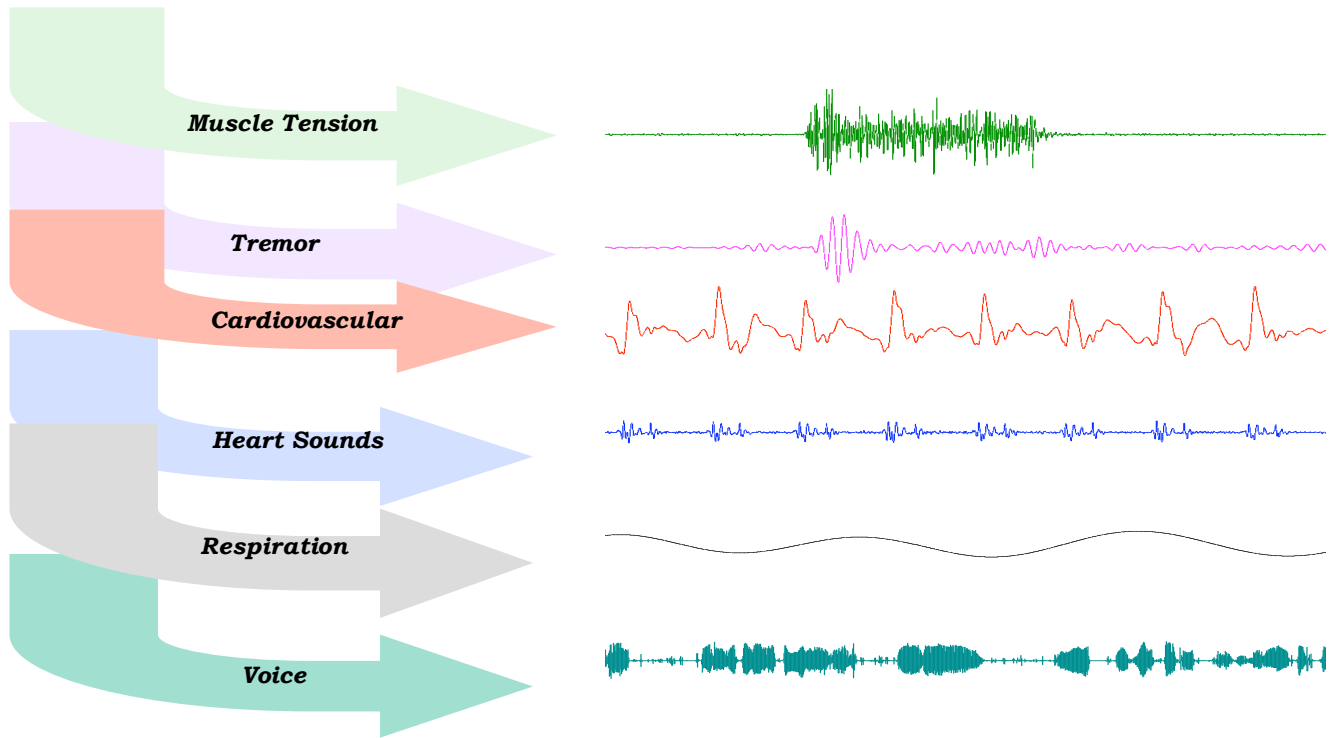


**Input :** Thermal radiation  
**Localization :** Tracking  
**Measurement :** Modeling  
**Output :** Physiological Variables



$$Q_r + Q_e + Q$$

0.0  0.06  
 ml/min\*100 g



**FUTURE PROTOTYPES**

- Sensor Chair
- LDV Biometric
- 3<sup>rd</sup> Generation TRACKER

**Status of Prototypes**

Prototype	Alpha	Beta	Field	Battle-Lab
TRACKER	x	x	x	
Thermal Facial Screening	x	x		
Laser Doppler	x			

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