

## VRCPAT

Virtual Reality Cognitive Performance Assessment Test  
2006-present

ICT has developed an adaptive virtual environment for assessment and rehabilitation of neurocognitive and affective functioning. This project brings together a team of researchers to incorporate cutting-edge neuropsychological and psychological assessment into state of the art interactive virtual Iraqi/Afghani scenarios, including a simulated city, checkpoint, and Humvee.

**The Army's Needs:** An Adaptive VRCPAT based upon individual Soldier differences can be used to greatly enhance assessment and training:

1. Assess Soldier's performance within VRCPAT allows for the establishment of a baseline that is reflective of individual differences.
2. Neurocognitive and psychophysiological profile data may be used for real-time adaptation of the VRCPAT.
3. Evolution of these profiles developed for use in VRCPAT could lead to direct training of military operations in the real world.

**How ICT Met Those Needs:** Findings from our research have provided the military with the following:

1. A neurocognitive and psychophysiological interface modeled off of trainees interacting in a virtual environment that mimics Iraqi and Afghan environments, for modeling a trainee's adaptive responses to environmental situations.
2. A system for military trainers to develop more reliable and valid measures of training performance.
3. Civilian dual-use capability in conditions involving psychophysiological correlates to neurocognitive function and emotion regulation in persons immersed within a virtual environment.

### Future

ICT is extending the VRCPAT findings by examining performance not simply by a user, but teams of Soldiers.

### Facts and Figures

- VRCPAT is being used to run subjects at Tripler Army Medical Center, Ft. Lewis, Madigan Army Medical Center, West Point, USC and UCSD.
- VRCPAT has been used in studies with over 400 subjects, including both Soldiers and civilians.



At the University of Southern California Institute for Creative Technologies leaders in artificial intelligence, graphics, virtual reality and narrative advance low-cost immersive techniques and technologies to solve problems facing service members, students and society.