

# NAVY Transition Assistance Program

"Approved for public release; distribution is unlimited."

## NEED & CUSTOMER REQUIREMENT

**Need:** Current Virtual Environment (VE) based training systems focus exclusively on incorporating the psychomotor and cognitive aspects of learning. This may lead to decrements in learning outcomes due to the lack of an affective learning component in those systems. In VE-based immersive training systems, the user's affective state must be considered as a key component in learning to make the training systems more effective.

**Value to the Warfighter:** Through a process of affective state detection and induction, VE based training system can improve training effectiveness by better approximating the real-world experiences encountered by soldiers upon deployment in the field.

**Operational Gap:** Current affective state detection and induction technologies cannot produce reliable performance. Accuracy of current affective state detection solutions is not acceptable and effectiveness of current affective state induction techniques is not promising for real-world systems.

**Customer Specifications:** Quantified performance specifications have not been specified for this effort.

**Technology Description:** VRSONic's Real-time Affective state Detection and Induction System (RADIS) will be combined with Affective Virtual Environment Training System (A-VETS) that will be developed by Design Interactive Inc. and provide an end-to-end scenario design and runtime system for training. RADIS dynamically monitors a trainee's affective state, compares that state to a target affective state encoded in the lesson plan for that training session, and then uses emotional state induction techniques to drive the trainees' emotional state towards the target emotional state.

## TECHNOLOGY DEVELOPMENT MILESTONES (SBIR/STTR)

Milestone	TRL	Risk	Measure of Success	TRL Date
Affective State Induction	5	High	Mood specification implemented	Oct. 2009
SLP Interpreter	7	Low	SLP specification completely implmeneted	Mar. 2010
Rule Base	7	Low	Rule Base component operational	Mar. 2010
Affective State Detection	7	Moderate	Recognition Accuracy > 90%	May 2010

**Open contract:** N0014-09-C-0063 ending Jun. 2010

# N07-078 - VRSONIC, INC.

## A Framework for Incorporating Affective Learning in Virtual Training Environments

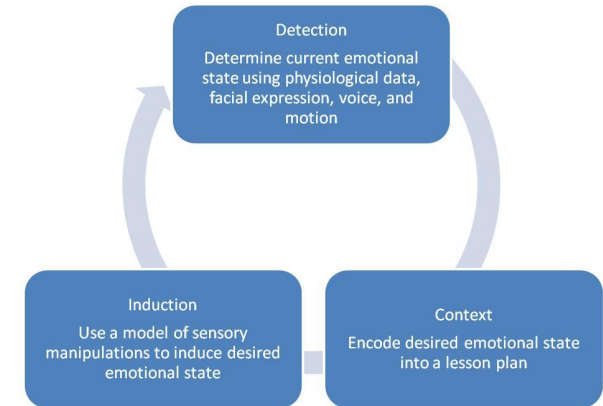
### SPONSORSHIP of original SBIR/STTR Topic

**SYSCOM:** ONR - SBIR

**Transition Target:** MSAT, ITT, Marine Corps training commands

**Original Sponsoring Program:** PM TRAINING SYSTEMS, PMA-205 and NAVAIR TSD

**TPOC Phone Number:**  
703-696-0364



### TECHNOLOGY TRANSITION OPPORTUNITIES (PHASE III)

#### Other Potential Applications:

The solution is targeted to VE-based warfighter training systems and can be applied to any other types of VE based training systems such as flight training systems, transportation training systems, medical training systems, etc.

#### Business Model:

VRSONic will transition this technology through licensing agreements with third parties as well as commercial product sales. The affective state detection capability will be licensed to third parties as an enabling technology. Along with Design Interactive, VRSONic will market a training software engine called Affect DX that will integrate with instructional game engines.

#### Objective:

VRSONic is seeking primes that develop and integrate training solutions or that require an affective state detection capability.