

# Skill Appropriate Training Environment (SKATE)

## NAVAL AIR WARFARE CENTER TRAINING SYSTEMS DIVISION ORLANDO FLORIDA



### EXHIBIT FACT SHEET

## Skill Appropriate Training Environment (SKATE)

### What it is:

- ◆ SKATE is designed to quickly rate skill level of trainees using automatic classification of Knowledge, Skills, and Abilities (KSAs)
- ◆ SKATE interfaces with the simulation environment to acquire performance variables which are used as inputs to skill classifier
- ◆ SKATE was integrated into Unmanned Aerial System (UAS) Common Control System (CCS) to assess skill levels of air vehicle operators (AVOs)

### How it works:

- ◆ SKATE acquires simulator variables such as electro-optics pod control inputs, button pushes, and trainee physiological data from the simulation environment and performs real-time analysis of behavioral patterns that allow classification of skill level
- ◆ SKATE requires training data at known skill levels to be able to classify subsequent trainee data
- ◆ Different training tasks require different classification data. Currently, SKATE is set up to classify skill levels of UAS sensor operators

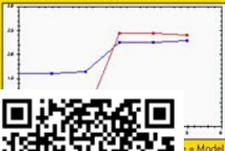


## SKill Appropriate Training Environment (SKATE)

Task: Search  
Subject: 8  
IOS Rating: 3  
Classified Rating = 5  
Avg. Class. Rating = 5



Entropies



SKATE Skill Rating Gauges in Integrated CCS interface

## **What it will achieve:**

- ◆ Allows for rapid screening of trainee skills and abilities in a mission related context
- ◆ Provides instructors with information to optimize the training assignment for a student
- ◆ Skill appropriate selection of training tasks challenges trainee for optimal learning while reducing the risk that the student may be overwhelmed by tasks that are too difficult to complete

Large-scale distributed training exercises involve many trainees at various stages of their training maturity and skill level. Problems arise in large-scale exercises when less mature or lower-skilled trainees are exposed to training scenarios that are too advanced or too complex for their level of training maturity. These trainees are more likely to fail the mission they are given in the training scenario, thus reducing the benefits of training and leading to frustration in the trainee. In addition, the failure may possibly jeopardize the success of other trainees who depended on a reasonably successful outcome of a mission task element in the scenario.

The SKATE concept was designed to quantify skill levels of trainees, teams, or units; generate skill-appropriate training scenarios; and provide a continuous skill-level assessment of disparately skilled trainees, teams, and units in a joint training exercise—while maintaining the overall integrity and realism of the mission itself.

The exhibit features SKATE integrated into UAS CCS simulator to assess the skill level of the sensor operator in real-time. The SKATE-equipped CCS simulator is a self-contained system consisting of six computer screens installed in three rack towers with control interfaces on an attached table. Additionally, an eye tracker is used to show the eye gaze behavior of the sensor operator. The vehicle operator uses a human machine interface to control a generic UAS similar to a Fire Scout. The sensor operator uses a targeting pod to search for objective targets in a sensorized visual database.