NOTICE OF AWARD
COUNTY OF BERGEN
ADMINISTRATION & FINANCE, DIVISION OF PURCHASING
REGISTERED COOPERATIVE PRICING SYSTEM #11-BeCCP
REGISTERED BERGEN COUNTY COOPERATIVE CONTRACT PURCHASING SYSTEM #CK04
ONE BERGEN COUNTY PLAZA, HACKENSACK, N.J. 07601

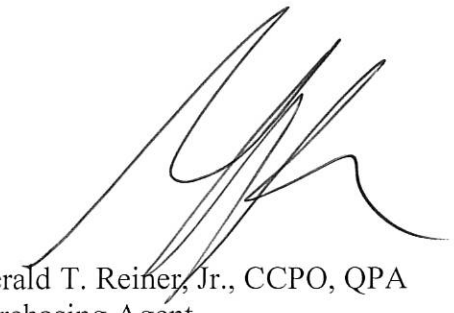
Service/Commodity:	**Disaster Management Training System**
Bergen County Bid #:	**16-58**
Contract Period:	**August 24, 2016 through August 23, 2018 - (24-Month)**
Board of Chosen Freeholders Resolution:	**#920 -16, dated August 24, 2016**

PRICES:

Unit prices quoted shall be firm unless otherwise stated herein, net exclusive of all taxes and must include all transportation, delivery and unloading costs, fully prepaid FOB destination, inside delivery debris removed.

AVAILABILITY OF COUNTY CONTRACT PRICES AND AGREEMENT:
The County Supplier agrees to make his products and county contract prices available to all Local Government Jurisdictions (Municipalities, Authorities and Public School Districts et al) which are enrolled in the County's Registered Cooperative Programs. Each Local Government deciding to take advantage of the subject prices shall itself be directly responsible for having drawn up and executed whatever Contractual Instrument it deems necessary for governing business relations between itself and the supplier.

DELIVERY ARRANGEMENTS, PLACEMENT OF ORDERS AND UNAPPROVED SUBSTITUTES:
All deliveries are to be made within the time period stated on the "Price Information Sheet". If the delivery time is not stated on the "Price Information Sheet" then delivery shall be ten (10) days of the receipt of order. Vendor must accept written Purchase Orders or authorized verbal request from authorized Personnel. Emergency deliveries are to be made within twenty-four (24) hours of receipt of a telephone request from Authorized Personnel. Participants are authorized to accept only those items covered by County Contract. Compliance with this requirement is a joint responsibility of the participant and the vendor.



Gerald T. Reiner, Jr., CCPO, QPA
Purchasing Agent
201-336-7111

VENDOR INFORMATION

In order to assure that all future correspondence is directed to the correct address, assure proper ordering, expedite future payments, and in accord with I.R.S. regulations, the following information must be provided with this bid.

Name of Business: ETC Simulation

Correspondence Address (including zip code):

2100 North Alafaya Trail

Suite #900

Orlando, FL 32826

Purchase Order Address (including zip code):

2100 North Alafaya Trail

Suite #900

Orlando, FL 32826

Payment Address (including zip code):

ETC

125 James Way

Southampton, PA 18966

Telephone Number (including area code): (407) 282-3378

Email Address: LBozenbury@ETCsimulation.com

Fax Number (including area code): (407) 282-3582

Employer I.D. # or S.S. #: TIN #231714256

FAILURE TO PROVIDE ALL OF THE ABOVE INFORMATION MAY RESULT IN REJECTION OF THIS BID.

DISASTER MANAGEMENT TRAINING SYSTEM

OFFICE OF EMERGENCY MANAGEMENT

ADVERTISED BID PROPOSAL #16-58

ITEM NO.	ITEM DESCRIPTION (OR APPROVED EQUAL)	APPROXIMATE QUANTITY	UNIT OF MEASURE	*FIRM NET DELIVERED UNIT PRICE	TOTAL PRICE	ITEM OFFERED BRAND NAME & I.D. NO.
1.	DISASTER MANAGEMENT TRAINING SYSTEM AS PER SPECIFICATIONS PAGES 14 TO 22.	1	EACH	$75,000	$75,000	Advanced Disaster Management Simulator (ADMS™)

PROPOSALS SHOWING ANY ERASURE ALTERATIONS MUST BE INITIALED BY BIDDER IN INK.

ALTERED ITEMS NOT INITIALED WILL NOT BE CONSIDERED FOR AWARD.

DISASTER MANAGEMENT TRAINING SYSTEM (or approved equal)

The virtual reality simulation training system should allow for training command and control for emergency response, disaster management, homeland security and military staff. The scenarios to be trained should include fire, rescue, hazardous materials situations, vehicle accidents, aircraft accidents, disasters, crowd control, homeland security, CBRNE events, terrorist attacks, Industrial, and continuity of operations.

ADMS – UP Portable Simulator Components:

- 17" Laptop computer with power supply integrated in the case with shock absorbing foam interior. Case shall have ventilation channels for cooling the system
- Wireless mouse and mouse pad.
- Projector: Full color, LED WXGA 1280 x 800 resolution, 16:10
- Controller for viewpoint control and function selection
- Set of 2.0 stereo speakers integrated in the custom foam interior.
- All required power cords and cables
- ADMS – Command software with permanent licenses

Manuals – One (1) printed copy of Operation Manual in English. One (1) digital DVD copy of Operation Manual in English. One (1) set of manufacturer manual for all control devices and other applicable equipment

FUNCTIONAL REQUIREMENTS

The training system should incorporate the following functionality:

- Produce a high-level of IMMERSIVENESS AND BELIEF where trainees feel as if they are in the actual situation, and experience the on-scene stress that they would feel at an actual emergency, allowing for the most field-like decisions to be made. This consists of high-fidelity visual environments, incident locations, resources, and people; directional sound; high resolution visual display system with a sufficient frame rate of the simulation to show a smooth image to the trainees; the ability to give real world commands (good or bad); correct execution of tasks; see the real-time consequences of their decisions and implement corrective actions to redefine the outcome of their decisions

- Be REALITY-BASED, where all features are based on real-world timing, including accurate vehicle deployment times based on traffic and route, real-time execution of tasks by responders, evacuations from buildings, deterioration of Injuries if not treated in a timely manner, and the use of fire-fighting agents. The complete range of rescue and fire-fighting activities should be correctly simulated, Including deployment of hoses, use of personal protective clothing/equipment, climbing ladders, walking up/down staircases, cutting holes in roofs, extricating people from cars, covering spills with foam, covering up sewers, rescuing people by ladder truck, blocking a road that automatically stops traffic. etc.

- Be NON-SCRIPTED AND OPEN-ENDED, with no pre-determined outcomes: actions and results taking place in the simulation should be based solely on the trainees; decisions (right or wrong). On-the-fly Injects during a training exercise by training staff should be possible, keeping the simulation capability intact.
- Have embedded PHYSICS-BASED simulation, enabling the correct growth and spread of fire, smoke, gas clouds, spills, leaks and other elements as they would i n the real world, including realistically reacting to variables such as wind speed, wind direction, and agent application. This should include accurate simulation of correct volume capacity of hoses and hydrants, agent usage and effects for firefighting and cooling.
- Have embedded ARTIFICIAL INTELLIGENCE in the simulation, governing the movement and patterns of traffic, people, response vehicles and responders, with behavior and reactions consistent with those expected at a live Incident. This also includes the impact that threats, variable conditions and trainees' decisions have on the medical condition of the casualties, and the traffic patterns navigating road blocks and traffic congestion. Be able to simulate in a real-time scenario a minimum of 50 response vehicles with a minimum of 150 responders + crowds of minimum 500 people + a minimum of 100 moving vehicles.
- Allow a realistic level of INTERACTIVITY, where trainees improve their skills with a simulation that gives them the same immediate feedback they would experience in the real world.

- Be able to support full MULTI-AGENCY participation, so that all emergency management organizations train together, including Fire, Rescue, Police, Law Enforcement. HAZMAT, Medical Response, etc.
- Be MULTI·LEVEL, so that all levels of personnel (Strategic, Operational and Tactical) are trained either together or separately.

    a. Be MULTI-VIEW, where the visual scene is shown from the various participating trainee's point of view, as well as views from security cameras, vehicles, helicopter, etc.

- Allow USER-CREATED exercises, where training staff is able to create, modify, and save scenarios.

    a. Training staff should also be able to create scenarios by adding elements from a virtual asset library either as a pre-set or an on-the-fly inject. The ability to specify variables including HAZMAT materials and the corresponding placards / markings, weather conditions, time of day, availability and type of available resources, should be included.

- Include quantifiable scoring, where the system automatically scores the trainees on defined objectives, as well as allowing for instructors to input their observations.

    a. Have the capability of incorporating CUSTOMIZED curriculum, observation and scoring which can be modified for each scenario to meet changing training objectives, operational procedures, or observation and scoring requirements.

- Be able to support COURSEWARE, where training Instructors can export media clips (videos and pictures) to support training.
- Allow support training staff to create, edit, save, and control an integrated MASTER SCENARIO EVENT LIST including time- and trigger-based events.
- System should include an EVENT MARKER TOOL to mark on the time fine and comment any event during training for after action review exercise playback.
- Present detailed AFTER ACTION REVIEWS, allowing Instructors to completely replay an exercise, view from any perspective and pause and re-start. In addition, a detailed, time-stamped action list should be output for each exercise, describing the scenario events and the actions that the trainees initiated.
- Be able to be localized, where the visual environment and the vehicles and personnel are customized to match the local situation.
- Be EXPANDABLE.so that additional stations and new environments/models/ scenarios can be added at any time.

- Be capable of integrating multiple types of INPUT CONTROLS for realistic training and input into the exercise, such as driving controls, etc.

TECHNICAL REQUIREMENTS

- The simulation system shall be flexible in set-up, and should allow for individual, classroom, team, and command post training.
- The simulation system shall provide scenarios that allow realistic training for first responders, officers, Incident commanders, Incident command teams, and command post staff.

- The simulation system shall allow supporting command post level training and exercises for fire fighters, vehicle commanders, fire officers, incident commanders, and Instructors.
- The simulation system shall produce a high-level of reality and belief, where trainees feel as if they are in the actual situation, and experience the on-scene stress that they would feel at an actual emergency, allowing for the most field-like decisions to be made. This requires high-fidelity visual environments, incident locations, resources, and people; directional sound; high resolution visual display system; the ability to give real world commands; correct execution of tasks; see the real-time consequences of their decisions and implement corrective actions to redefine the outcome of their decisions. The incident scenarios must be open-ended and Interactive, and react to the decisions of the trainees.
- Trainees should be able to walk around the scene and into buildings by use of a joystick. Collision detection embedded in the simulation must prevent that trainees walk through objects, walls, cars, etc.
- The simulation system shall run in real-time. Emergency response vehicles should be stationed at fire stations located in the virtual world, and can tum out from there to the scene via a selected route. The time to the incident depends on the route and traffic. On the way to the Incident the commander will have an out-the-window view, and can see the street, traffic, and development of the incident, i.e., smoke when there is a fire. Crews must execute actions in real-time.
- The simulation system must allow training staff to create new scenarios by selecting the incident location, fires, hazardous materials, explosions, spills, leaks, hazmat signs, cars, trucks, casualties, crowds, fire trucks, police cars, ambulances, etc. Training staff must be able to save, edit and rename exercise scenarios. It should be possible to save created exercises on an external drive and transfer these to the other stations.
  The simulation system shall include large virtual environments for large scale operations and logistics. The responding resources shall be located at several emergency response stations. The city environment shall have buildings, roads, traffic lights, street lights, parks, ponds, street signs, etc.
- The scenarios shall cover fire, rescue, hazardous materials, disaster management, active shooter and hostage situations.
- Minimum required incident locations are:

    a. Multi-story and multi-purpose building

    b. Highway

    2. Underground tunnel
    3. Industrial warehouse
    4. Fuel tank farm
    5. Airport

6. Seaport
7. Residential house
8. School

The simulation system shall include resources crew stationed at emergency response stations. The instructor should be able to determine the location of the resources at the start of an exercise. The resources shall be fully functional and represent the local situation, such as Fire Truck, Ladder Truck, Rescue Vehicle, Airport Fire Truck, Decontamination Tents, Triage Tents, Fire Officer Car, Command Post, Ambulance, Police car, SWAT, Bomb Squad.

The simulation system shall have an observation and scoring system. The observation system should allow the training staff to input their observations during the training exercise. The scoring system should include a pass/no pass selection by the instructor during the exercise, as well as system-generated Objective information about the trainee's performance. Combining these two sets of scores, one Subjective and one Objective, will determine the final results. The results should be able to be printed for trainee record keeping purposes and/or saved digitally on a USB device directly from the system. Instructional staff should be able to tailor the observation items and ratings per observation item to correspond with their curriculum and scoring methodology.

The system should have an after action review capability that records the exercise to support de-briefing. In the playback mode, it should be possible to start, pause or stop the exercise to review and analyze the Incident and the response activities from any point of view, including a birds-eye perspective.

- Instructors shall be able to operate the system by a user-friendly graphical user Interface with menu selection, map selection, and drag and drop capability.

The simulation system should allow presenting a 2D map and 3D image to the training staff for controlling and running the exercise. Deployment of the resources should be possible by drop down menu and map.

The simulation system should allow training staff to create screenshots and videos from the scenes and save these on an external drive, to be used for courseware such as PowerPoint presentations.

- The simulation system should Include modes to deploy resources in real-time and in table top model.

The simulation should include moving traffic with embedded artificial intelligence that can be influenced by actions of the trainee. Traffic shall stop when roads are blocked. If roads are not blocked correctly, traffic shall bypass the roadblock.

- Trainees should be able to walk around in the 3D environment by use of joystick and view the situation. Trainees should also be able to select certain functions such as binocular and triage via the joystick.

- Trainees in the role of commander should be able to step in and out of the vehicle, and drive their vehicle by joystick in the 3D environment.

The simulation system shall include weather conditions that affect the fire, smoke and hazardous material plumes based on physics –based dispersion model. Training staff shall be able to select wind direction, wind speed, rain, snow and selection of cloud cover. When changing wind direction during an exercise, the effect of the change of

smoke direction should be gradual. The system shall also include setting the time of day (day/ dusk/ night). When the exercise is in progress, the time changes in real time. The simulation shall include several weather conditions.

- The system shall include artificial intelligent vehicles and crews. Several emergency response vehicles and several crews should be included. Water consumption shall be based on type of hose and the firefighting action. Crews shall be part of the vehicle and shall drive with the vehicle from the fire station to the incident.
  In real--time mode the vehicles should drive from the emergency response stations to the incident scene. In table-top mode the vehicles must be deployed instantly. It should be possible to switch between real-time and table top mode -and back • during an exercise.

- The simulation should Include moving traffic with embedded artificial intelligence that can be

  influenced by actions of the trainees. Traffic will stop when roads are blocked. If roads are not blocked correctly, traffic should bypass the roadblock.

  Trainees should be able to walk- around in the 3D environment by use of joystick, and view the situation.

  Trainees should also be able to select certain functions such as binocular and triage via the joystick.

Trainees in the role of commander should be able to step in and out of their vehicle, and drive their vehicle by joystick in the 3D environment.

- The simulation system must include weather conditions that affect the fire, smoke, and hazardous material plumes based on a physics-based dispersion model. Training staff should be able to select wind direction, wind speed, rain, snow, and selection of cloud cover. When changing wind direction during an exercise, the, effect of the change of smoke direction should be gradual (not instant change). The system must also include setting the time of day setting day/dusk/night time conditions. When the exercise is in progress, the time changes in real-time, including day/dusk/night conditions. The simulation must include several weather conditions. For example the clouds in the sky must react to wind speed and direction.
- The simulation system must provide artificially intelligent vehicles and crews. A minimum of 50 emergency response vehicles with a minimum of 150 interactive virtual crews should be included. Water tenders will carry agents Uke water and can connect to hydrants. Water consumption will be based on type of hose and the firefighting action. Vehicles can run out of water. Crews will be part of each vehicle, and will drive with the vehicle from the fire station to the incident. On the way the commander can decide to don breathing apparatus. The crews should execute actions in real-time. Crews must be able to wear personal protective clothing, run hoses, fight fires, rescue people, place and climb ladders, rescue by turntable ladder, deploy lights, walk inside buildings, extricate people from vehicles etc.
- The simulation system must include casualties that can be triaged in the scenario. Training staff can select casualties in the triage categories T1, T2, T3 or T4. When triage is performed casualties should show a triage

card. Casualties can be taken by crews to a casualty collection point or treatment tent, and from there transported by ambulance, bus, or medical helicopter and delivered to a hospital. Primary and secondary triage Information must be provided.

- The simulation system shall show realistic effects of facility and object evacuation, firefighting and rescue actions. Fires must respond correctly to firefighting actions. The firefighting agents should look and behave realistically. Water and foam streams should splash when hitting, for example, a wall, car, or object. Spills should grow dynamically if the leak is not stopped. When extinguishment is effective also the effect of steaming should be simulated automatically by the system.
- The simulation of dispersion of the chemical clouds and spills, fires and smoke must be based on physics-based simulation and respond to terrain slopes, wind speed and wind direction.
- The simulation must include the in-screen display of hazardous materials meters. The readings displayed on the various meters should be calculated based on the physics-based simulation and hazardous plume settings by the Instructor.
- The simulation must include the In-screen display of breathing apparatus pressure gauge. The readings displayed on the gauges should be calculated based on air consumption of virtual responders.
- The simulation system must have collision detection for vehicles, people, and firefighting agents. Vehicles and people should not collide, or drive/walk through other objects by using embedded artificial intelligence.
- The simulation must include directional sounds emanating from people, hazards, and traffic.
- The system must include a Library with 3D elements for unlimited scenario flexibility. It must be possible to place the objects from the 30 library into the virtual environment to create scenarios. Training staff should have the ability to create new situations and Incidents at predefined Incident locations in the virtual environment. The predefined area should consist of approximately a 650 ft. radius-area around each incident location. This capability should allow the user to select the incident location and construct new scenarios. The 3D objects must include cars, tanker trucks, trains, busses, barrels, containers, people, casualties, chemical plant sections, aircraft, helicopters, spills, fires, plumes, building signs, dirty bombs, radiological sources, and piles of debris/bricks/tires, fences, cones that have specific settings and functionality. The 30 objects can be placed by clicking on the map and positioning the objects at the location needed. Multiple quantities of the same objects should be able to be inserted into the scenario, for example, to create a fence line. The created scenario should then be able to be named, saved, opened, and re-edited at any time. The objects should also be able to be added on-the-fly at any time during an exercise. We require two types of objects: static props for creating a visual scene (like pile of sand) and active props with embedded artificial intelligence, anti-collision, and physics-based simulation capabilities (like a car that can bum and its' associated passengers/casualties), and aircraft engine affecting the engine fire and simulation of flames.

- The User Interface must be in English, and should be easy and quickly to operate by training staff to facilitate exercises in real-time.
- The system should be expandable with multiple stations.
- The system should be able to be expanded with vehicle driving capabilities including steering wheel and pedals.
- The system should be expandable to incorporate 180 degrees curved projection display systems.
- The system should be able to be expanded with an Aircraft Rescue Fire Fighting (ARFF) vehicle simulator.
- The system should be expandable with a virtual fire hose trainer.

- The system must have the capability to insert user created photographs, videos and sounds into the system must have the capability to insert user-created photographs, videos and sounds into the virtual reality environments for scenario scene creation.

  The system must include the ability to have a "bad-guy station", where the terrorist and his movements are controlled by one of the trainees

  The frame refresh rate should be 60 frames per second, and incidentally not be lower than 30 frames per second.

SOFTWARE REQUIREMENTS

I. Linux operating system for flexibility and expendability.

II. The system must be a proven true virtual reality simulation system. No video based / digital animation / visualization systems are allowed.

OTHER REQUIREMENTS

- One (1) year warranty for the complete system should be Included.
- Two (2) day training course for total of 12 instructors and facilitators should be Included.
- The simulation system shall be provided with a permanent license, no additional license fees are applicable.

- Manufacturer must demonstrate that the simulation has embedded physics – based simulation effects, anti-collision detection, automated way-finding, automated task-execution and artificial intelligence.

- Manufacturer shall have in-house engineering, programming, virtual reality environment resource modeling and user-training capability.

- Manufacturer shall offer a total support plan to keep the system up to date and maintained.

New Equipment is required, newly refurbished will not be accepted.

If vendor is bidding and approved equal, vendor shall provide in the bid package, specifications for each item listed. Specifications will not be accepted after bid opening.

DISASTER MANAGEMENT TRAINING SYSTEM

OFFICE OF EMERGENCY MANAGEMENT

ADVERTISED BID PROPOSAL #16-58

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