



Northern California Regional Public Safety Training Authority
2409 Dean Street, Suites 118-119, McClellan 95652

**REQUEST FOR PROPOSAL
FOR
TRAINING COORDINATOR
DOJ-NIJ VIRTUAL REALITY TRAINING RESEARCH PROJECT**

1 REQUEST FOR PROPOSAL

The Northern California Regional Public Safety Training Authority – Joint Powers Authority (Training Authority) is seeking proposals from experienced and qualified firms or individuals to assist with the implementation of all conditions of a Department of Justice, National Institute of Justice Cooperative Agreement.

1.1 PROPOSAL

Firms or individuals responding to this RFP shall submit (2) copies of the proposal. Proposals must be submitted in accordance with the Submittal Requirements noted in Section 2 of this RFP no later than 3:00 p.m. on Wednesday, March 2, 2011 to:

Northern California Regional Public Safety Training Authority, JPA
2409 Dean Street, Suite 119
McClellan, CA 95652
Attn: Kelly Rowley, JPA Business Services

1.2 BACKGROUND

The Northern California Regional Public Safety Training Authority has been awarded a Department of Justice (DOJ), National Institute of Justice (NIJ) Grant, Cooperative Agreement #2010-IJ-CX-K008, Project Title “Can a Virtual Reality Social Network, Such as Second Life, Provide Realistic Training?” The Project Period is October 1, 2010 to September 30, 2011. The Cooperative Agreement was fully funded at the requested amount of \$499,931.

The NIJ grant award requires the Training Authority to meet all of the proposed activities and research requirements programmed in the grant application. Extracts of the grant application are made part of this RFP (See Attachment 1). The Training Coordinator will work as part of the implementation and management team with the Grant Training Director and JPA staff. All contractors and employees ultimately report to the Board of Directors via the Executive Director (See Organizational Chart in Attachment 1).

As this is the first grant awarded directly to the Training Authority, the Training Coordinator will also assist with the establishment of Training Authority policies and procedures.

Compensation: The hourly rate of the successful candidate will be negotiated based on experience and education.



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All travel and approved business expenses will be reimbursed per federal regulations and budget constraints.

The successful candidate will be an employee of NCRPSTA with the maximum value of the contract of \$50,000.

Training Coordinator

Qualifications:

Knowledge of project management and supervision; knowledge of federal grant procedures and reporting requirements; instructional skills.

Other/Desired Skills:

Familiarity with distance learning and the virtual reality environment of Second Life.

Essential Functions:

The ability to perform the basic functions of the position; sustain regular work attendance; work cooperatively and effectively with students, faculty, and staff; exercise initiative and mature judgment; work as a member of a team; and meet schedules and time lines.

Education/Experience:

Masters degree in a related field preferred plus five years of instructional experience. Knowledge of quantitative and qualitative research methodologies.

1.3 TECHNICAL QUESTIONS

Technical questions regarding this Request for Proposal (RFP) shall be directed by email or in writing no later than 4:00 pm (PST) on Thursday, February 25, 2011 to:

Valentina Lukovtseva
Valentina_grant@yahoo.com

Technical questions must reference this RFP and include the individual's name, company, address, and email contact information.

Answers will be sent to the inquiring individual and/or copies of inquiring emails will be sent to all registered bidders. Interested parties may become registered bidders by notifying the JPA Business Office of their interest in writing.



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1.4 PRE-PROPOSAL CONFERENCE

No pre-proposal conference will be offered for this RFP.

1.5 SCOPE OF SERVICES

Position Summary:

The Training Coordinator will provide program direction and oversight of a National Institute of Justice grant to determine if commercially produced social networking systems, such as Second Life, can be adapted to provide realistic and productive training for law enforcement and corrections students throughout the nation.

Typical Duties:

Following the direction of the Executive Director and the Grant Training Director, implement program policies, curriculum development, course oversight, classroom instruction (both traditional classroom and virtual reality classroom), coursework review/grading, and preparation and submission of all programmatic grant-related reports.

Cooperative Agreement:

The Training Coordinator will be responsible for ensuring that all Cooperative Agreement goals are accomplished (See Attachment 1).



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1.6 EVALUATION CRITERIA

PART 1 - Written Proposal

Proposal will be evaluated on the basis of the overall best value for the Training Authority based on the quality, service, price, and other criteria set out in this RFP, but not limited to:

- The Proposer's demonstrated experience in similar projects;
- The Proposer's business and technical reputation and capabilities, and where applicable, the experience of its personnel, financial stability, track record, and references of current and former customers;
- The proposed project resources and the skills, knowledge, and previous experience developing public safety training and/or research programs.
- The proposed plan of approach and work schedule;
- The proposed methodology for coordination with the Training Authority;
- Quality of submission;
- Compliance with all Training Authority insurance requirements (where appropriate); and
- Any other criteria set out in the RFP or otherwise reasonable and considered relevant.

PART 2 - Interview

Top candidates will be interviewed to determine which candidate most closely meets the Training Authority's needs.

1.7 SELECTION PROCESS

The selection process is described below.

- After the RFP has closed for receipt of proposals, each proposal will be examined to determine compliance with the format and information requirements specified in the RFP. Any proposal that does not meet the format and information requirements may be eliminated from competition and returned to the consultant. The Training Authority may reject any proposal if it is conditional, incomplete, or contains irregularities. The Training Authority also reserves the right to reject all proposals.



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- A Selection Panel will review each proposal that meets the format and information requirements.
- Following independent evaluation of the proposal, the top candidates may be requested to participate in an interview to determine and select the consultant that most closely meets the Training Authority's needs.
- All competitors will be notified of the results.

1.8 ADDENDUMS

It is the Proposer's responsibility to request notification of any potential addendums to the original RFP. The Proposer must notify the Training Authority by becoming a registered bidder as described in section 1.3 of this RFP.

1.9 NOTABLE DATES

RFP Release	February 17, 2011
Technical Questions Due Prior To	February 25, 2011 @ 1:00 PM (PST)
Submission Deadline	March 2, 2011 @ 3:00 PM (PST)

1.10 SUBMISSION PROCESS:

All documents are required to be received by the Training Authority prior to the Submission Deadline. Proposers may deliver the documents:

- In person (hand delivered);
- Common carrier (e.g., U.S. Mail, FedEx, etc.)

Northern California Regional Public Safety Training Authority, Joint Powers Authority

Attn: JPA Business Office
2409 Dean Street, Suite 119
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A completed Application Packet will include the following:

1. Letter of interest
2. Proposal
3. Resume
4. Compensation Requirements
5. Two Letters of Recommendation



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ATTACHMENT #1 – Grant Application Extracts

Criminal Justice Training Through The Use of Virtual Environments Solicitation

Can a Virtual Reality Social Network, Such as Second Life, Provide Realistic Training?

Grant Application by:

Authorized Signature: Joe Valenzuela, Executive Director
Executive Offices
Northern California Regional Public Safety Training Authority, JPA
2409 Dean Street, Room 118
McClellan, CA 95652

Programmatic Point of Contact:
Mickey Bennett, Training Director
Grant Training Office
3720 Dudley Blvd., Room 120
McClellan, CA 95652

Financial Point of Contact:
Kelly Rowley, Administrative Analyst
JPA Business Office
2409 Dean Street, Suites 118-119
McClellan, CA 95652



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Abstract

This grant application is designed to determine if commercially produced social networking systems, such as Second Life (SL), can be adapted to provide realistic and productive training for law enforcement and corrections students throughout the nation.

The Northern California Regional Public Safety Training Authority (Training Authority) has been impacted by changing work requirements, and agency budgetary constraints have prevented students from participating in our training. Virtual Reality (VR) training may provide an alternative training venue.

Preliminary research indicates that Second Life (SL) is a viable VR program. SL is a 3-D virtual world where users can create an avatar to represent their persona inside the game or training activity. SL users can create buildings, landscapes, or anything users can imagine including public safety equipment, uniforms, jails, patrol cars, weapons, etc.

The SL creator developed a social networking system that connected people via the Internet. Users are required to download a thin platform onto a computer; however, the vast majority of the program is run by SL. There is no cost to the end user to create their basic avatar.

Goals for this grant application are:

- 1) Redesign the Training Authority's existing intelligence analysts' active classroom training to become a VR active classroom;
- 2) Redesign the tactical village critical-thinking decision-making facility's training to be presented in a VR program;
- 3) Redesign the parole agent's Motivational Interviewing course to become a VR active classroom;
- 4) Compare and contrast VR against test classrooms and/or training facilities;
- 5) Compare and contrast how different VR vocational training presentation methodologies impact criminal justice students; and
- 6) Report the research findings to a national audience using multiple information-sharing medias.

Both qualitative and quantitative research methodologies, as prescribed by the American Educational Research Association's Standards, will be used to evaluate all project goals under controlled environments.

During a literature review we were unable to locate any literature addressing VR criminal justice vocational education training. This may be the first research project to compare and contrast vocational training for criminal justice students in VR against the classroom. It is our hypothesis that VR training meets or exceeds classroom training, so the primary question is not whether VR social networking sites can provide training, but rather how effective is the training and does the training produce the desired results. Also the students' data from all three courses will be compared to determine the effectiveness of VR instructional presentation modality.

Since the beginning of the organized criminal justice system, we have struggled to improve our profession by increasing ethical values, hiring standards, and education. Today's quest for excellence



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has been slowed by financial complications; however, we continue to search for better, faster, and cheaper ways to accomplish our educational goals. Attempting to make sure that technology-mediated education, especially in the age of the Internet, is “as good as” the traditional classroom education delivery seems a low goal to set. Rather, we should be examining how we might best utilize the unique capabilities afforded us by Internet technology – asynchronous learning, interactive simulations, directed links to resources, and now virtual reality – to improve learning outcomes.

The grant will disseminate project results in traditional written form, including case studies, but will also use Internet systems, person-to-person contact, information vendors at national conferences, and free SL program “give-aways” to share information and collaborate with other organizations.

We request funding be approved for \$499,931. The return-on-investment is excellent, for not only will the NIJ receive quality reports, but all of the SL training facilities and educational tools can be given away free of charge to approved institutions, thereby multiplying SL VR training throughout the U.S.A.

Can a Virtual Reality Social Network, Such as Second Life, Provide Realistic Training?

SECTION 1 – PROGRAM NARRATIVE

Purpose: This grant application is designed to determine if commercially produced social networking systems, such as Second Life (SL), can be adapted to provide realistic and productive training for law enforcement and corrections students throughout the nation. The results of the research will be reported in an objective, independent, evidence-based, nationally distributed report to criminal justice organizations to share the knowledge and enhance discovered tools. The scope of the proposal is designed to two levels of evaluation: 1) Compare and contrast baseline classroom effectiveness against a social media service virtual reality training process, and 2) Determine which virtual reality vocational education methodology (lecture, small-group discussions, group collaboration, video presentations, oral briefings, etc.) are most effective for criminal justice students.

Problem Statement: The Northern California Regional Public Safety Training Authority, hereafter referred to as the Training Authority, is the manager of a Department of Homeland Security (DHS) grant to train intermediate-level fusion center intelligence analysts throughout the United States. Changing work requirements, limited training facilities, and agency budgetary constraints have prevented some students from participating in our DHS-funded training. For example, even though the program is tuition-free, many organizations are unable to afford the travel and per diem expenses. Our training has been directly impacted by the current fiscal restrictions. Virtual reality training may provide an alternative venue for offering quality training, reducing costs, and increasing participant attendance.

Several months ago the Training Authority discovered this fiscal barrier to quality training. We began looking for an alternative method to provide quality training to students at remote locations. During the search for new and effective training methodologies, we began looking at Virtual Reality (VR) training opportunities. This included a literature review, where we found multiple scholarly articles on VR, but did



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not find any articles directly related to criminal justice training using VR. We did become aware of the NIJ solicitation to conduct VR research for similar issues in criminal justice training. There appears to be a perfect match between the needs of our organization and the needs of the nation for research and development of VR training resources and programs, plus an opportunity to present increased quality training to criminal justice organizations and students.

Should this grant application be approved, we intend to 1) expand our existing DHS grant's active classroom training to a VR active classroom, 2) expand our existing tactical village critical-thinking decision-making facility to a VR decision-making program, 3) compare and contrast the effectiveness of VR training services to those of existing classroom and/or training facilities, 4) compare and contrast the effectiveness of different vocational training methodology within the VR, and 5) report the research findings to a national audience using multiple information-sharing medias to law enforcement, corrections, and criminal justice educators.

Training Authority: The Northern California Regional Public Safety Training Authority was formed on September 7, 2001, as a Joint Powers Authority to provide training for public safety agencies in Northern California. It was established as a joint venture, under California Government Code section 6400, by the Sacramento County Sheriff's Department, the Sacramento Police Department, the Sacramento Metro and City Fire Departments, and the Los Rios Community College District – the second largest community college district in California. Since 2001, the Training Authority has expanded to become a statewide training provider for the California Commission on Peace Officer Standards and Training (POST), and now provides training nationwide.

The Training Authority maintains a 40-acre campus located near Sacramento, California, where it provides mandatory pre-service and in-service training for law enforcement and fire service personnel. The facility includes a conference center; classrooms; personal training rooms; a 5,000-square-foot gymnasium; an all-weather, quarter-mile rubberized track; a K-9 training facility; and a small-arms and long-range shooting facility (with frangible ammunition). The facility also houses the Sacramento Regional Office of Homeland Security, which includes the Regional Terrorist Threat Assessment Center (a nationally-certified fusion center), the Sacramento DHS Urban Area Security Initiative, the Sacramento Valley High-Tech Crimes Task Force, the Sacramento City and County Office of Emergency Services, and the Federal Emergency Management Agency's Western Immediate Management Assistant Team.

Also included on campus is a 17,000-square-foot, state-of-the-art live modular training simulator with a movie-set design that simulates the interiors and exteriors of various types of buildings in a lighting- and weather-controlled warehouse, commonly referred to as a Tactical Village training facility.

The DHS-grant-funded fusion center Intelligence Analyst Training Program incorporates both classroom and online technology. The Training Authority has used Angel and Blackboard online classrooms to present training to students from 16 states to date, including Arizona, California, Illinois, Louisiana, Minnesota, Missouri, Nevada, New Jersey, New York, Ohio, Pennsylvania, Texas, Utah, Vermont, Virginia, and Wisconsin.



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The project will be under the direct supervision of the Training Authority's Grant Training Director, Mickey Bennett, who has over 40 years' experience in both public safety and vocational education. The Director and Training Coordinator will receive guidance from a Steering Committee consisting of a current or recently retired City Police Chief, County Sheriff, Director of State Parole, Director of Prison Industries, and a Linden Lab Government Accounts Manager. This extensive training experience and commitment to excellence sets the stage to meet or exceed the solicitation request of the NIJ to evaluate VR technology.

History: According to the Congressional Research Service of the Library of Congress, VR technology enables Web content that is interactive and user generated. VR technology goes beyond traditional Web pages and allows users to operate in three dimensions of space, simulated within the computer. VR is part of what is known as Web 2.0, a second-generation method of using Web technology to create communities, or social networks, where instead of passively viewing content, each user can dynamically create, modify, and share Web content. Thus, Web 2.0 technology allows users to collaborate and create self-organizing communities that can 1) increase the value and power of peer relationships, and 2) simultaneously disrupt traditional, real-world methods for hierarchical control over information flow.

Early examples of 2-D Web 2.0 social network communities include YouTube, LinkedIn, and Wikipedia. Many businesses now use different 2-D Web 2.0 tools to accelerate innovation, and several large corporations have also established a simulated presence inside commercial 3-D VR worlds to expand real-world sales. Several government agencies, including the Centers for Disease Control and Prevention and the National Oceanic and Atmospheric Administration, and, according to Linden Lab (the founder of VR Second Life), over 300 hundred colleges and universities have set up their own presence in VR environments.

Modeling and computer simulation have traditionally been used to train military pilots and tank crews. In many cases, the trainee steps into a simulator device, which is surrounded by screens that generate a 3-D image completely controlled by high-powered, computerized artificial intelligence.

New VR tools go beyond many traditional limitations and now allow multiple participants to freely interact with each other in similar 3-D computerized environments. In many cases, computer networking capabilities have dramatically increased to the point where users can now run complex 3-D VR simulations in the field using a laptop computer connected to the Internet. VR technology and the Internet allow large numbers of personnel (e.g., military units, first responders, civilians, and medical personnel) to interact in a simulated face-to-face environment, providing a training experience that is increasingly effective, but at a much lower cost than would be required for assembling these personnel for a real-life, face-to-face training exercise.

The Congressional Research Service concluded that VR technology offers a potentially effective and economically efficient tool for training military personnel to better deal with dynamic or potentially dangerous situations. It is timely and appropriate that we determine whether and how effective this technology can be used in the criminal justice environment.



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Social Media Selections: There are numerous VR commercial systems available for research and evaluation. They include Facebook, Amazing World, Utheverses, GeoSim, and Second Life. We propose to compare Second Life with existing classroom presentation and split-second decision-making simulation techniques, with follow up evaluation on the effectiveness of different vocational training methodologies within VR.

VR technology offers a potentially effective and economically efficient tool for training personnel to better deal with dynamic or potentially dangerous situations. VR participants use self-designed computer images, called avatars, which look and act like real people. They operate in virtual world environments that can have almost any combination of simulated characteristics — a busy U.S. border crossing checkpoint or a subway tunnel in downtown New York under chemical attack by terrorists. The resulting interactions can be unpredictable and can seem highly realistic to the individual operators involved. Some avatars can be used to simulate local citizens and, when operated by real-life people, can demonstrate culturally correct gestures, show facial expressions, and communicate emotions, which trainees must interpret correctly during these virtual world encounters. (For a more detailed discussion of the effects of virtual reality on trainees and operators, see “Your Guide to Virtual Worlds,” at http://www.pbs.org/mediashift/2007/10/digging_deeperyour_guide_to_vi.html, a Web site affiliated with the Public Broadcasting System [PBS] media enterprise.)

According to KZero, a worldwide virtual world consulting company, SL is designed for and attracts adult participants with an average age of 33 years. SL has the most users in the 20 – 30+ age group (www.kzero.co.uk). This corresponds with our criminal justice target audience and makes SL an excellent candidate for VR training evaluation.

What is Second Life (SL): Second Life is a 3-D virtual world where users can create an avatar to represent their persona inside the game or training activity. SL users can also create buildings, landscapes, items, or anything else the user can imagine. The SL program can also provide public safety equipment, including uniforms, jails, patrol cars, weapons, and evidence to be collected. The SL virtual world became available to the public in 2003.

The original SL creator developed a social networking system that connected people throughout the world via the Internet. Users are required to download a thin platform onto a computer; however, the vast majority of the program is run by the SL server system. There is no cost to the end user for the download or the creation of the basic avatar. While this is a commercial, for-profit organization, all player costs can be absorbed by the host’s “island.”

“Islands” are locations within the virtual world for which a host pays a fee for property rights. Once the island is established, the host can construct buildings, roads, and trees, and duplicate the real world (http://en.wikipedia.org/wiki/Second_Life). The island can be divided into different sectors, each with different themes or settings. Security protocols can be established for each island and section within the island to allow only selected (e.g., law enforcement, corrections, etc.) avatars into the training area.



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Sectors may be assigned to groups of participants for a defined time period (e.g., Ohio State Police assigned on Monday from 0001 hrs. to 2200 hrs.).

SL is not just for individual use; corporations currently use the virtual world as well. Fortune 500 companies such as Sun and IBM heavily use SL. These companies established virtual recruiting centers in SL and hold employee meetings “in-world” (within the virtual world) as well. During meetings or training sessions people meet in small groups or teams to accomplish assigned missions. There are also public, community-based meetings where open discussion and presentations are unrestricted and all avatars are welcome to participate. More than 300 colleges and universities hold classes in SL. The virtual world even has a special educator email list with over 4,000 subscribers.

Project Goals: The goals of this grant application are to:

- 1) Redesign the Training Authority’s existing DHS grant’s active classroom training to become a VR active classroom;
- 2) Redesign the Training Authority’s existing tactical village critical-thinking decision-making facility to a VR decision-making program;
- 3) Redesign the parole agent’s Motivational Interviewing course to become a VR active classroom;
- 4) Evaluate the effectiveness of VR training services by comparing and contrasting VR to those of existing classroom and/or training facilities;
- 5) Evaluate the effectiveness by comparing and contrasting different VR vocational training presentation methodology; and
- 6) Report the research findings to a national audience using multiple information-sharing medias to public safety organizations including law enforcement, corrections, and administration of justice educators.

Evaluation Comparison: The grant application proposes to evaluate three types of training processes: 1) Active classroom, 2) Lecture classroom with role playing, and 3) Decision-making simulations. The goal of the evaluation is to compare and contrast the effectiveness of the different types of learning environments in the “real-world” as they compare to the “virtual reality world.” Existing courses will serve as the baseline and will be compared to VR courses replicated in the VR world of SL.

	Existing Courses	Activities	Second Life (SL)	Projected Activities
Active Classroom	Intelligence Analyst Training (for public safety)	Very limited lecture, group discussions, assigned group activities, oral presentations, major “war-game” activity	Intelligence Room with minor modifications	All activities can be duplicated in SL
Lecture Classroom with Multiple Role-	Motivational Interviewing (for parole and	Substantial instructor lecture, group	Intelligence Room with minor modification	All activities can be duplicated in SL



Playing Activities	corrections)	discussions, role-playing		
Decision-making Simulations	Empowering Critical Thinking, Split-Second Decision Making Using a Tactical Village Simulation	Observing, hearing, danger evaluation, policy evaluation, survival instincts	Develop tactical village and duplicate avatars to present same emotional stimuli	Visual, hearing, and emotions can be duplicated in SL; smell and touch may be difficult

Additionally, within the VR the different types of curricula presented will be evaluated by comparing and contrasting how administration of justice students receive the training and how effective each modality of training can be presented in a VR. The three following courses present all of the traditional presentation modalities, including lecture, group discussions, role-playing, oral briefings, and even large-group exercises. A description of each course follows:

#1 – Course Title: Intermediate Fusion Center Analyst Training Program

Type of Training: Public safety training in an active classroom

Training Design: The Training Authority has two DHS-certified, 26-hour active classroom courses (Critical Thinking and Analytic Techniques, and Strategic Analysis and Oral Briefings). These two courses are part of the Intelligence Analyst Training Program.

Development Required: No course development is required as we are utilizing existing classroom courses. All courses will need a video capture system developed so students and/or instructors can view the students’ actions and conduct an after-action review.

Adaptation Required: The Training Authority will use an interactive classroom created by the University of Edinburgh, entitled the I-Room, which has already been provided to the Training Authority. There will be very little modification to the VR I-Room, but course-specific information will have to be uploaded.

Evaluation Process: The existing class activities, assessment rubrics, and evaluation will be used for the traditional students and the VR students. The VR students’ results will be compared and contrasted to similar students’ results in a traditional classroom and against all VR students in the three VR courses.

Training Audience: This is primarily a group/team program. Each group/team will be evaluated. Individual actions will also be evaluated.

#2 – Course Title: Motivational Interviewing

Type of Training: Lecture classroom with multiple role-playing activities for parole and corrections



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Training Design: Motivational Interviewing is a directive approach to encouraging the client's responsibility to change. The course focuses on interaction between parole agents and/or correctional officers and the parolee or inmate. The curriculum focuses on the Responsivity Principle, motivating clients through the six-step model to build an effective case plan. The course design requires multiple role-playing activities, up to one third of the 24-hour course (<http://nicic.org/downloads/pdf/library/021093.pdf>).

Development Required: The I-Room model will be used as a foundation for the instructor lecture and student role-playing interaction. All courses will need a video capture system developed so students and/or instructors can view the students' actions and conduct an after-action review.

Adaptation Required: The I-Room will be modified to create multiple, typical interview locations (e.g., office, custody room, client's residence, etc.) to enhance the realism of the interview. Small group discussions will occur after each role-playing activity, which will require audio zones for each small group to interact during their discussions.

Evaluation Process: Assessment rubrics will be developed and used to evaluate the students. The grading system will be built into the program. The VR students' results will be compared and contrasted to similar students' results in a traditional classroom and against all VR students in the three VR courses.

Training Audience: This is a multi-user training process which duplicates and/or replaces a traditional classroom.

#3 – Course Title: Decision-making Simulations

Type of Training: A critical thinking during force-options split-second critical-situations course

Training Design: A Tactical Village is designed to simulate an environment that is as close to reality as possible while maintaining safety and controlled conditions. This allows emergency responders to experience realistic situations that will enhance their ability at both the command level and the task level. This is accomplished through the use of changeable training scenarios, realistic special effects, smoke, sound, low lighting, infrared cameras, and an audio and visual system that captures the training scenarios for analysis. The Training Authority has a Tactical Village that is used to create real-life scenarios requiring split-second decisions. Existing instructors will collaborate with the grant staff to select or create scenarios that can be incorporated into a VR replication of the Tactical Village. The instructional staff will include local, county, and state law enforcement and corrections training officers.

The primary purpose of the Tactical Village is to empower critical thinking by making critical decisions in a controlled and safe environment. The Tactical Village has the ability to set-the-stage for incidents including: Shoot/don't shoot situations, ethical issues related to the use of force, dynamic building entry, domestic dispute resolution, jail cell entry, vehicle approaches, improvised explosive devices (IED), and even suicide/homicide bomber intervention.



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Development Required: To appropriately compare the Tactical Village training to the VR training, an SL replication of the Tactical Village will need to be developed. The California Commission on Peace Officer Standards and Training's and FBI *Law Enforcement Officers Killed or Assaulted* report will be used as one of the tools to develop scenarios. Standardized scenarios must be written which can be presented in the real world and the VR world. All courses will need a video capture system developed so that students and/or instructors can review the students' actions and conduct an after-action review.

Adaptation Required: The existing audio and visual system is out-dated and cannot capture the necessary data to compare and contrast the students' responses to the VR decision-making simulator. Computerized controls, a digital capture system, audio sensors, and additional cameras are required to capture the necessary data.

Evaluation Process: How accurate are the split-second decisions made by students? In SL a virtual world copy of the Tactical Village will be generated. Specific scenarios will be designed which can be presented in SL and in the village. Students will be recorded in both worlds and assessment rubrics will be used to compare and contrast the multiple actions or responses to include: accuracy of action, compliance with agency policies, time deference of decision making, and other topics established during the development phase. The VR students' results will be compared and contrasted to similar students' results in a traditional classroom and against all VR students in the three VR courses.

Training Audience: Tactical Village training is primarily a single-user program; however, scenarios can be modified to train groups or teams.

Review of Relevant Literature: To prevent lost productivity and enhance the accomplishment of the tasks, a complete and detailed review of existing relevant literature would be the first phase of the research, adaptation, and evaluation process for the establishment of a VR training program. In light of experiential technology advances, however, it is important to also be prudent with time and resources. To that end, literature research will be limited to the maximum return on investment during a fixed time of this phase of the grant.

At a minimum relevant literature to be reviewed will include the Congressional Research Services of the Library of Congress, Linden Lab case studies, the National Law Enforcement and Corrections Technology Center, the Real Life Government Agencies Using Second Life association, and the March 2010 Federal Virtual World Challenge sponsored by the U.S. Army Research, Development, and Engineering Command.

Research, Test, and Evaluation: The question is not whether VR social networking sites can provide training, but rather how effective is the training and does the training produce the desired results. To determine whether training is effective, the grant will compare results from traditional classroom and physical simulation facilities to VR classrooms and VR simulation sites. Also the students' data from all three courses will be compared to determine the effectiveness of the instructional presentation modality.

Shelley Stewart, Ph.D., from University of South Florida and editor of the American Educational Research Association's Qualitative Research Special Interest Group's newsletter, wrote in the March 26,



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2008 edition: “What do 3-D environments have in store for education? In this article I will discuss what Second Life is, a bit about how it works and the possibilities it holds for education. What is Second Life: Second Life (SL) is an online 3-D virtual world imagined and created entirely by its Residents. How does Second Life work? First you create your avatar, your persona in the virtual world. Then you teleport, yes, it’s like Alice in Wonderland! All of a sudden you’ve landed (hopefully on your feet – gracefulness is not built in but a learned characteristic) on an island to socialize, be entertained or conduct business. What do 3-D environments have in store for education? If we consider the affective elements that constitute a ‘learning environment,’ we might think of body language, eye contact, and even the casual conversations students have among themselves before and after (sometimes during) class. These components of the ‘classroom’ are not trivial and yet the explosion of distance learning has not successfully replicated these factors in many cases. Does Second Life offer this social presence that distance learning has been lacking? Perhaps...the 3-D virtual world of Second Life allows users to shake hands, sit next to other avatars, look at each other (or not) and chat, verbally with duplex audio or text. See for yourself: <http://secondlife.com/>.”

With Dr. Stewart’s understanding of Second Life and her educational research expertise, she recommended that the qualitative methodology be used to determine the effectiveness of training, including: surveys, interviews, content analysis, observations, and reflective journals. The qualitative methodology would be conducted in accordance with the American Educational Research Association’s (AERA) Standards for Reporting on Humanities-Oriented Research. The standards were adopted by the AERA Council in January 2009, and were developed to assist researchers in education in preparing manuscripts that are humanities-oriented, reviewers who are charged with evaluating publications, and readers who are interested in building upon such work.

However, there are areas within the grants body of research which should be evaluated by quantitative research techniques. Part of the research evaluation will focus on the technical portions of the training. Most quantitative research studies can be placed in three broad categories: descriptive, relationship, and experimental research (*Applying Educational Research*, by Gall, Gall, and Borg). We will focus on causal-comparative research and correlation research.

The quantitative research will also be conducted using the AERA Council standards for Empirical Social Science Research, which is designed to advance high-quality research in education and to foster excellence in reporting empirical research.

Resources: Assessing Learning in SL

- University of Texas at Austin: Division of Instructional Innovation and Assessment (<http://www.utexas.edu/academic/diia/secondlife/assess.php>)
- Second Life Educators Forum (SLED) (<http://muveforward.blogspot.com/2007/12/learning-assessment-in-second-life.html>)
- C. Carter, *Knowledge Sharing Second Life Projects* (<http://www.cxknowledge.com/>)
- Baker, E. Dickieson, J. Wulfbeck, W. & O’Neil, H (eds.). (2006). *Assessment of Problem Solving Using Simulations*. NY, NY: Lawrence Elbaum and Associates



Research Questions To Be Answered: The focus of this proposal is to answer questions, including the 40 questions listed below, so others can use the information to increase training effectiveness for the criminal justice community. Research questions are broken into the following general areas: agency benefit, education, equipment/support systems, cost, and barriers to VR training. The following is a more detailed list of questions within each general area.

- **Agency Benefit Questions to Be Answered**
 - Can quality VR training be effectively presented to students?
 - Can high-quality VR training be presented a low cost?
 - Is face-to-face classroom training too expensive in terms of travel, etc.?
 - Will VR training increase attendance or total training hours?
 - Will agencies provide employees sufficient duty time to receive VR training?

- **Educational Questions to Be Answered**
 - Can VR split-second decisions be evaluated?
 - What VR training protocols are required?
 - Can perishable skills be retrained using VR?
 - Can VR training really be conducted at any time?
 - Can VR training be conducted at any computer?
 - How many of the five senses can be engaged using VR?
 - Is there a different learning curve for VR and physical classrooms?
 - Will students receive the quality of knowledge from SL?
 - Will tactical skills be enhanced in the SL physically safe environment?
 - Can SL immerse students in critical thinking?

- **Equipment/Support System Questions to Be Answered**
 - What are the minimum equipment requirements for systems to operate correctly?
 - How effective is SL's ability to capture and review students' videos to conduct "after-action" evaluation?
 - Can the SL program be edited or modified by the agency?
 - What is the minimum SL modification infrastructure required for the student's agency?
 - What is the minimum infrastructure equipment required for the host organization?
 - Can the addition of low-cost equipment increase productivity (e.g., Wii controls)?
 - How many people can participate in SL at the same time?
 - Can a real-world computer server assist the SL program?
 - How many avatars (students and teachers) can be supported by a single SL "island"?
 - How many SL "islands" are needed to support the total system?
 - How many SL sections or special areas will an "island" support?
 - What creation or continued support will SL provide training organizations?
 - Does SL protect the student's and organization's identification?
 - Will additional security software or protocols be needed in SL?

- **Cost to Support an SL System Questions to Be Answered**



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- What is the return on investment for each student's training hour?
 - What are the initial set-up costs?
 - What are the annual maintenance costs?
 - What is the cost of purchasing SL items "in-world" from SL business (e.g., uniforms)?
 - What is the cost of contracting with script writers, video production, programmers, etc.?
 - What low-cost, "off-the-shelf" equipment additions are available to enhance training?
 - Do any "off-the-shelf" items enhance the five senses?
- **What Resistance Exists to Virtual Reality Learning Questions to Be Answered**
 - How do Baby Boomer, Gen X, and Millennial Generation students accept VR?
 - Is there a gender separation in VR?
 - How does time zone separation affect student interaction?
 - Does SL contain social action that detracts from the education experience (e.g., language, naked avatars, criminal activities, etc.)?

Research Independence and Integrity: It is recognized that the practitioners and developers of any new or emerging process may unintentionally develop bias which interferes with the analytic deductions. Staff and developers will be required review the lesson concerning bias, which is presented during the Intelligence Analyst Training Program, Course 1 – Analysis and Terrorism Prevention. The lesson states that analytic judgments or decisions we make are based on preconceived ideas or models. It is a natural function of the human cognitive process – it's how our brains work. These preconceived ideas can be used to our advantage, but often they are counterproductive and lead to faulty or incomplete analysis.

Staff and developers will examine six impediments to effective thinking: emotions, mental shortcuts, stereotypes, patterns, biases, and mind-sets. Staff and developers will also be given strategies to help overcome these impediments' adverse effect on our thinking. By acquiring a sound understanding of the power of these impediments and applying structured techniques, analysis of problems can be markedly improved. The information in the lesson concerning bias is largely drawn from *The Thinker's Toolkit* by Morgan Jones (1995, 1998).

In addition to the staff training requirements, a contract will be presented to an independent researcher. The contract researcher will evaluate all research data and independence integrity, including implementation of appropriate safeguards established. If this application is funded, David L. Carter, Ph.D., Director of the Intelligence Program, School of Criminal Justice, Michigan State University, has agreed to accept the position of independent researcher to ensure project integrity.

Relevance of the Project for Policy and Practice in the United States: The Training Authority was established to provide training to public safety personnel. As a government organization, our sole function is to serve the community. Our expansion as a national training presenter has broadened our professional viewpoint and re-affirmed our commitment to a larger community: the U.S.A. It is our policy to openly share all information with any government or educational organization to expand the seat-of-knowledge for the betterment of the criminal justice system. We will make available not only finished reports, but also raw data.



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The results of this research are expected to have an impact on the process of future training, the compatibility of new technology to future generations, the cost of sending students to training facilities, the ability to deliver technical and human interaction training to students at remote locations, and to provide training at non-traditional times and facilities. This information needs to be shared with all who seek advancement.

Implications for Criminal Justice Policy and Practice in the United States: Since the beginning of the organized criminal justice system, we have struggled to improve our profession by increasing ethical values, hiring standards, and education. Today’s quest for excellence has been slowed by financial complications; however, we continue to search for better, faster, and cheaper ways to accomplish our educational goals. Attempting to make sure that technology-mediated education, especially in the age of the Internet, is “as good as” the traditional classroom education delivery seems a low goal to set. Rather, we should be examining how we might best utilize the unique capabilities afforded us by Internet technology – asynchronous learning, interactive simulations, directed links to resources, and now virtual reality – to improve learning outcomes. VR resources now provide criminal justice administrators with opportunities to change educational policies. More funds can be targeted to education and training rather than travel and per diem. Distances between students, instructors, and facilities now have less meaning. VR, for some students, is even an improved learning methodology. Agencies will be changing their educational funding policies and training priority system.

Performance Measures: If this proposal is funded, the Training Authority will comply with the performance measurements created for this solicitation. The performance measurements have been reviewed and the Training Authority is equipped to meet all of the listed objectives performance measurements, and grantee requested data.

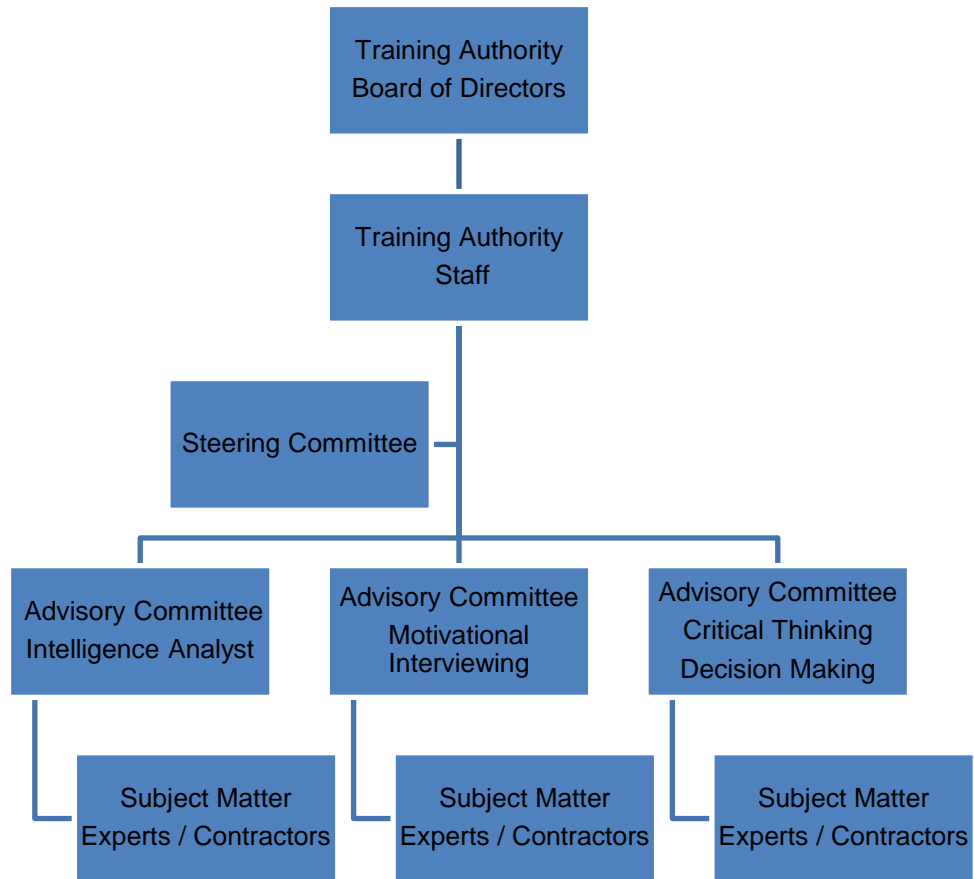
Objective	Performance Measure(s)	Data Grantee Provides
Provide safer, more effective tools and technologies for use by criminal justice agencies.	1. Relevance to the needs of the field as measured by whether the grantee’s substantive scope did not deviate from the funded proposal or any subsequent agency modifications to the scope. 2. Quality of the research as assessed by peer reviewers. 3. Quality of management as measured by whether significant interim project milestones were achieved, final deadlines were met, and costs remained within approved limits. 4. If applicable, number of fielded technologies.	1. A final report providing a comprehensive overview of the project and a detailed description of the project design, data, and methods; a full presentation of scientific findings; and a thorough discussion of the implications of the project findings for criminal justice practice and policy in the United States. 2. Quarterly financial reports, semi-annual progress reports, and a final progress report. 3. If applicable, each data set that was collected, acquired, or modified in conjunction with the project. 4. If applicable, description of fielded



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	<p>5. If applicable, number of NIJ final grant reports, NIJ research documents, and grantee research documents published.</p>	<p>technologies. 5. If applicable, citation to report(s)/document(s).</p>
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Management Plan and Organization: The Training Authority submits the following management and organizational plan.





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Training Authority: The Northern California Regional Public Safety Training Authority, JPA (Training Authority) is a local government organization as established by California Government Code section 6400. The Training Authority has all of the rights and responsibilities of any local government organization. The Training Authority is directed by a Board of Directors that meets monthly and provides continuous directions to the Executive Director. The Board of Directors will receive monthly progress reports on all grant activities, accomplishments, and financial expenditures.

Grant Training Division: The Grant Training Division (GTD) is an existing operation within the Training Authority. The day-to-day operation of the GTD is the responsibility of the Grant Training Director who reports directly to the Training Authority Executive Director. The GTD is currently managing a Department of Homeland Security (DHS) Competitive Training Grant (#2006-GT-T6-K006) and has five DHS-certified training courses which are being presented nationwide.

Steering Committee: The Steering Committee consists of executive officers from criminal justice organizations who meet at least quarterly to provide project direction to the Grant Training Division. Committee members are all experienced vocational educators with both instructor and program manager experience.

Advisory Committee – Each Course: Each of the three courses will have an Advisory Committee to work with the GTD and contractors. The Advisory Committee members will provide insight into the course curriculum, presentation methodology, and evaluation process, and will help interpret data and findings.

Independent Contracts: Contracts will be used as needed to accomplish the goals and objectives of the project in a timely manner. Each contract will be limited in scope to ensure that the most appropriate person is assigned to specific tasks.

Dissemination Strategy: The Training Authority will disseminate project results in traditional written form, but will also use Internet systems, person-to-person contact, and free SL program “give-aways” to share information and collaborate with other organizations.

A unique process in SL allows owners of products, training sites, buildings, roads, uniforms, etc., to freely give them to others within SL. Entire training venues and the computer programming which supports them can be given to a new user. That user then has full rights to the training venue and can immediately duplicate the training at their own island. This can be done hundreds or thousands of times, multiplying the original project and the number of students who can use the training program.

Case study reports, magazine articles, and full professional grant reports will be made available to any criminal justice or educational organization. The Training Authority will actively submit articles for publication in all trade or organization magazines or newsletters. This will include, but not be limited to, the International Association of Chiefs of Police, National Sheriffs' Association, International Association For Intelligence Educators, National Institute of Corrections, and the American Parole and Probation Officers Association.



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The Training Authority will maintain a presence in SL and an active Web site for two years from the beginning of the grant. The purpose of the SL presence and active Web site is to continue the distribute information, data, and reports and provide free SL items beyond the expiration of the grant.

We recognize the importance of people-to-people contact; therefore, we will participate as information vendors at two national conferences. One targeted conference is the International Association of Chiefs of Police conference. We will submit applications to speak at national conferences, with a goal of making two presentations. During conferences where we are selected as speakers or vendors, we will also conduct a multiple-user, hand-on lab for use by attendees.