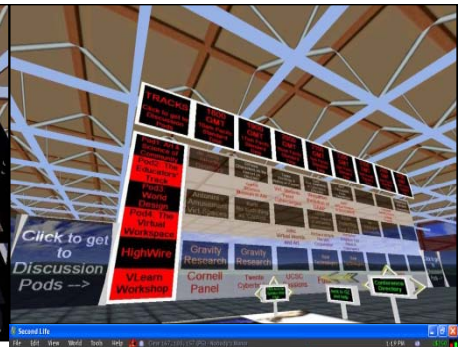
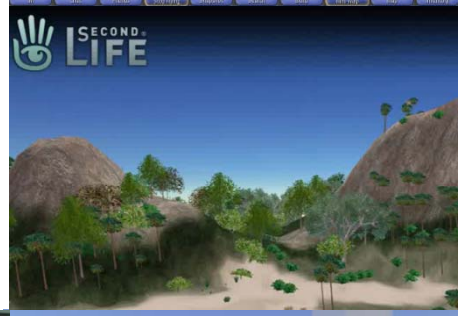
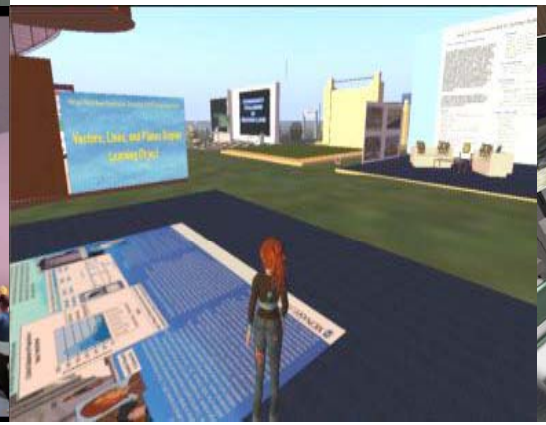








ISACA Jeddah Chapter – May 24, 2011

Information Assurance professionals and Virtual Worlds technologies: uses, benefits and challenges

Ahmad Faqieh MBA, PMP, CIA, CISA,
CISM, CGEIT, MCSE, ITIL, COBOT

Demonstration1

What we will do today

- Definitions and terminology
- VWs Facts and misconceptions
- VWs applications (general and specific)
- VWs benefits and challenges
- What is next
- Demonstration
- Questions and discussion

ISACA®
Trust in, and value from, information systems
Jeddah Chapter

"By 2019, Virtual Worlds will become the place the next generation lives and works"

Impact of Virtual Worlds: The online destination for the next generation?

Dr. Peter Markiewicz

ISACA®
Trust in, and value from, information systems
Jeddah Chapter

Virtual Worlds are…

3D immersive, persistent environments where people meet, interact, make friends, and accomplish tasks

Imagine a world without physical borders and restrictions where you can move anywhere in less than second

Each user create virtual representation of himself and use it to LIVE in the virtual life (You choose who you want to be and how you will look like)

Virtual Worlds Terminology

Multi-User Virtual Environments

- ActiveWorlds (1997)
- There (2003)
- Kaneva (2004)
- Qwaq (2007)
- Google Lively (2008)
- Second Life (2003)

A **virtual world** is a computer-generated simulated environment designed to allow users to navigate in and interact with objects and components in the virtual environment.

Immersion is the state of consciousness where an immersant's awareness of physical self is diminished or lost by being surrounded in an engrossing total environment; often artificial.

A **virtual world** is a genre of online community that often takes the form of a computer-based simulated environment, through which users can interact with one another and use and create objects.

An **avatar** is the graphical representation of the user or the user's alter ego or character. It may take either a three-dimensional form, as in games or virtual worlds

VWs Facts

It is not only online game, it is the game of life

It is the new 3D Internet

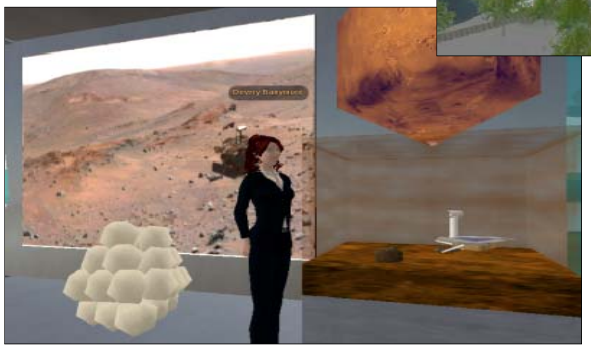
It is the virtual economy

You do real work

Virtual World is not a game. The environment is virtual **But the people are REAL**

VWs Features

- immersive environment
- shared experiences
- role playing
- stereotypes challenged
- collaboration



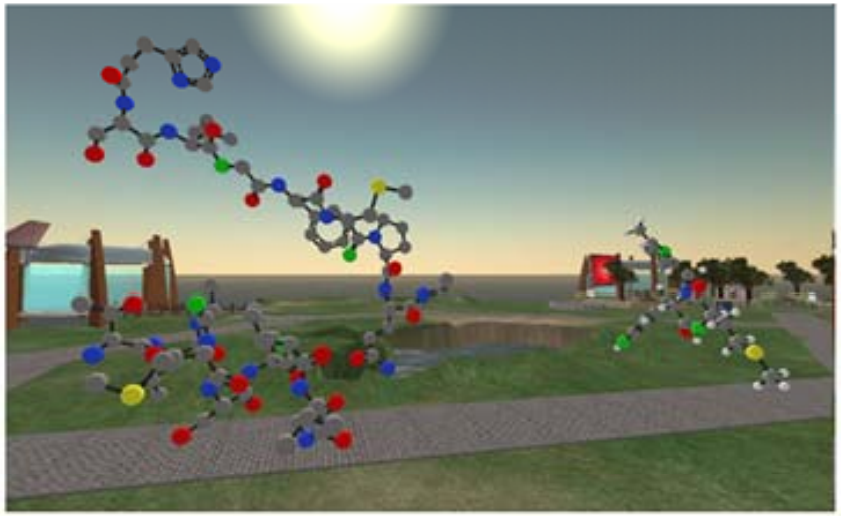
General Applications

- **Simulation and Training**
  - Airplane
  - Ship Handling
  - Dismounted war fighter
  - Firefighter
- **Entertainment**
  - Mechwarrior
  - Unreal (games)
- **Education**
  - Historical Recreation
  - Virtual Gorilla
  - Physics
  - Biology
  - Medical
- **Scientific Visualization**
  - Physics
  - Aeronautics
  - Medical
- **Psychology**
  - Perception and Cognition
  - Therapy
  - Pain Distraction
- **Engineering & Design**
  - CAD
  - Sketch
  - Architectural Walkthrough
- **Art**
  - Interactive and Immersive

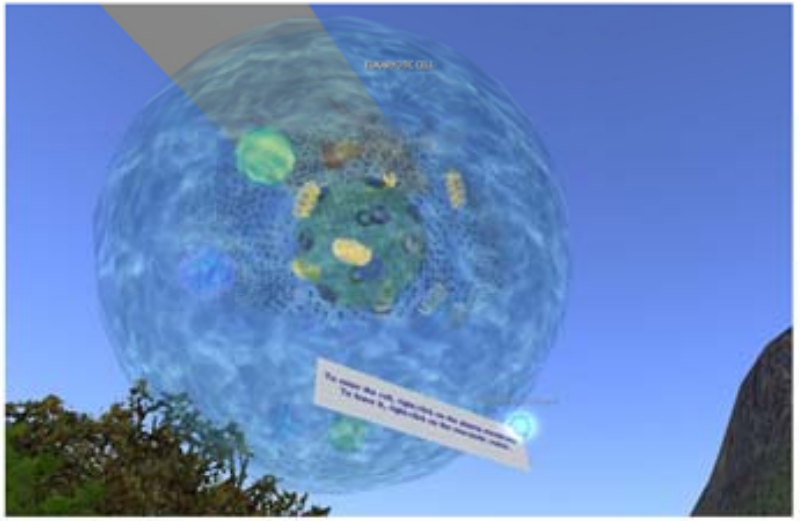
Second Life: It's Not A Game!

Poster sessions

Conferencing



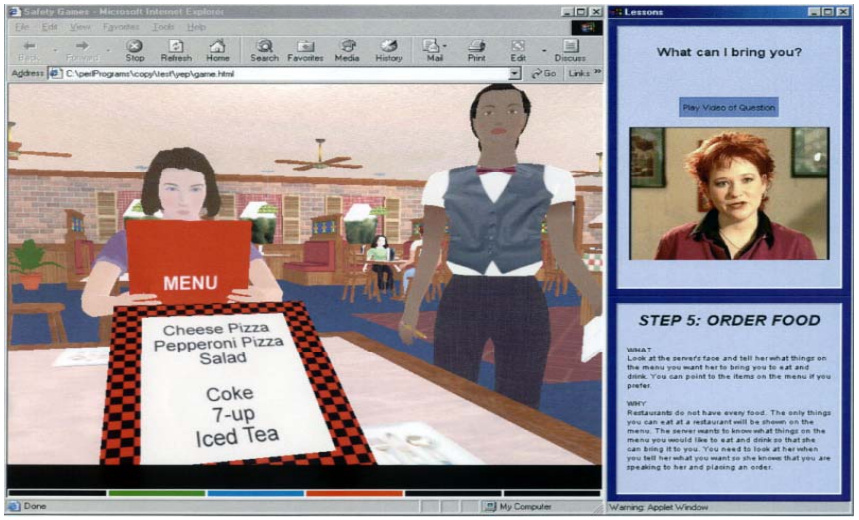
Data visualization



Education

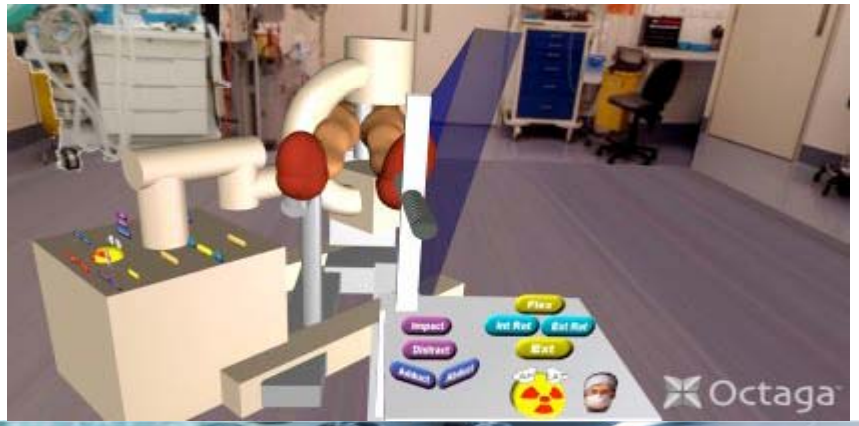
Chinese restaurant in Second Life teach chiness language

Virtual restaurant to teach children restaurant etiquette



Information notice board on the stairway of learning

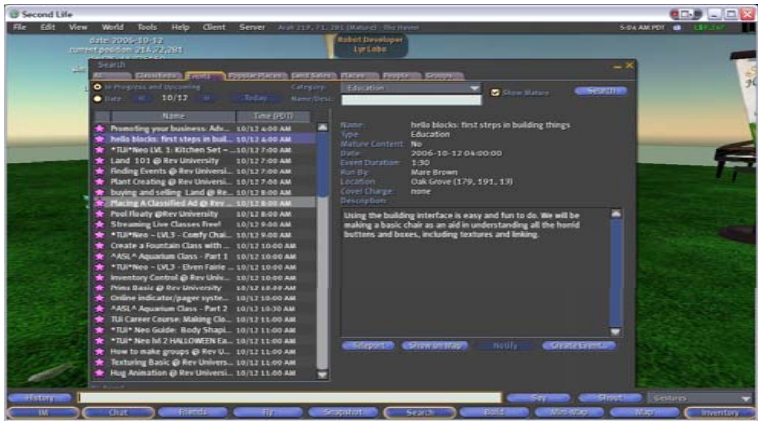
The virtual operating room showing the traction console



ISACA®
Trust in, and value from, information systems
Jeddah Chapter

VWs Education Applications

Virtual Education Classes



Class Projects

Virtual Campus

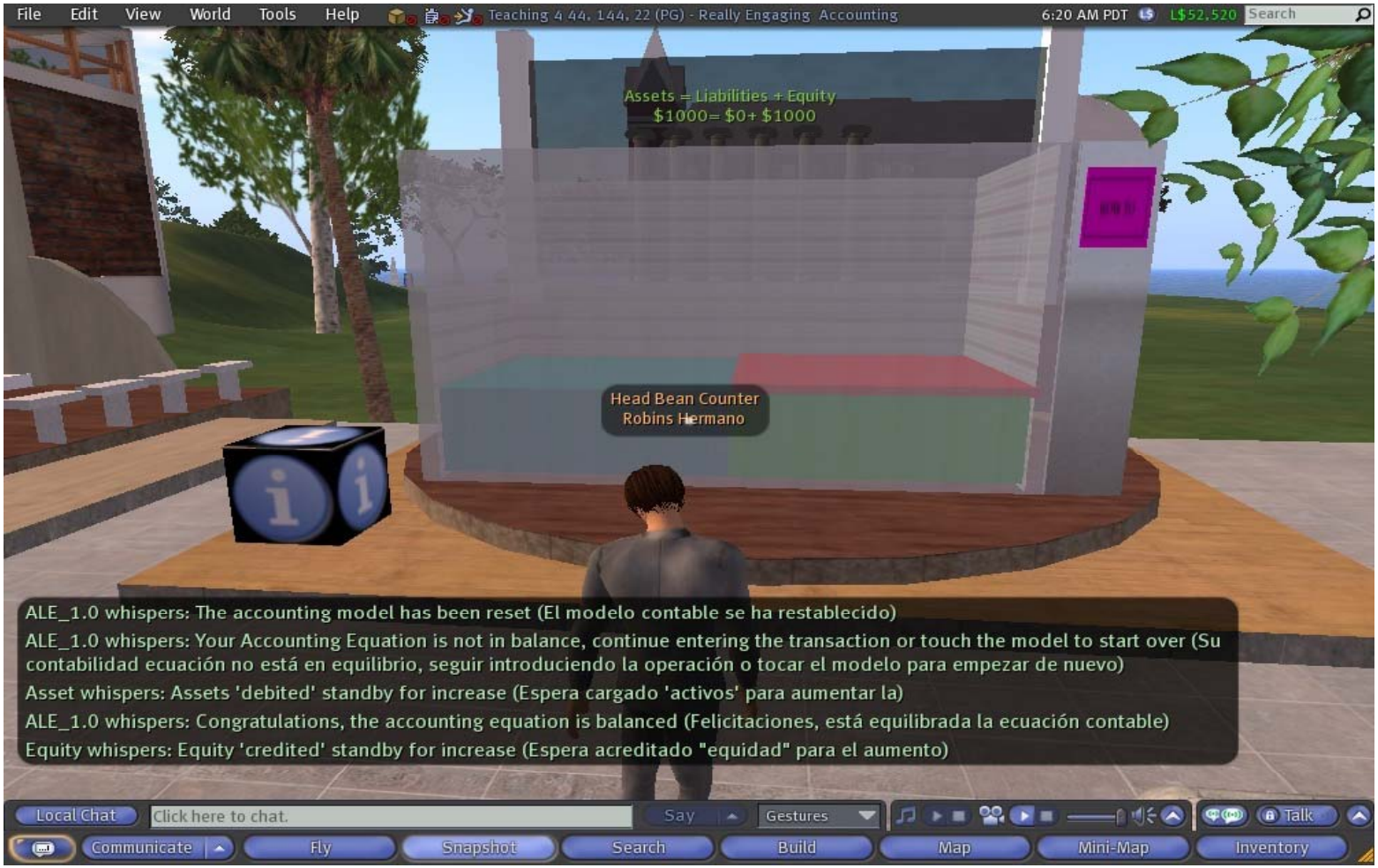
Virtual Classrooms

ISACA®
Trust in, and value from, information systems
Jeddah Chapter

Demonstration2

VWs Audit/Accounting Application

VWs Audit/Accounting Application



VWs Information Security Application

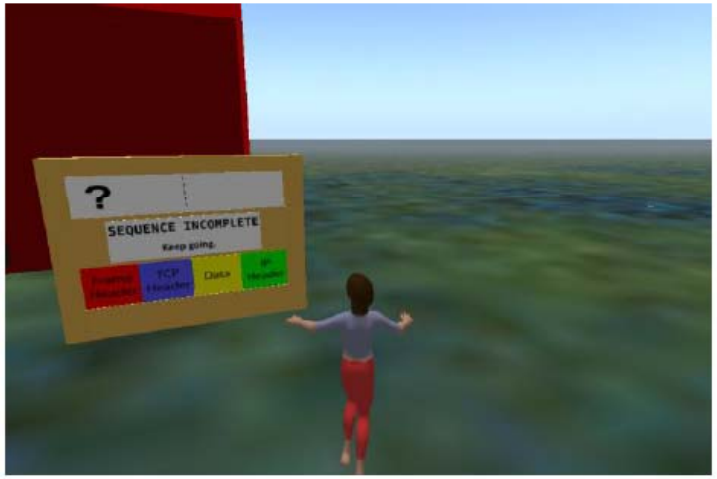


Figure 1: The Packet Assembly Board

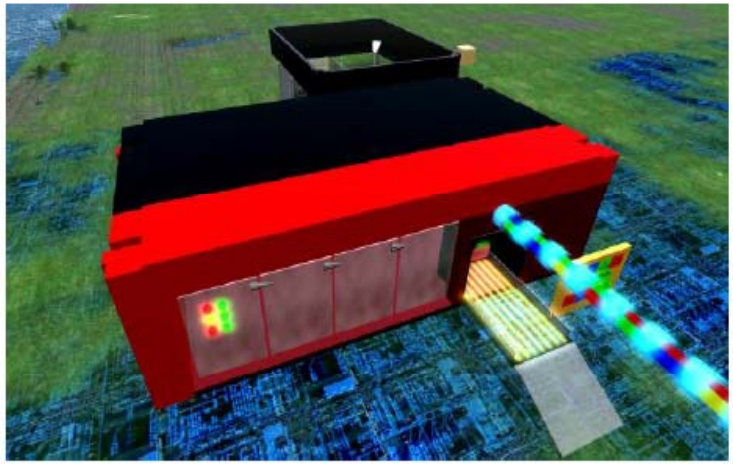


Figure 2: Red Team Base

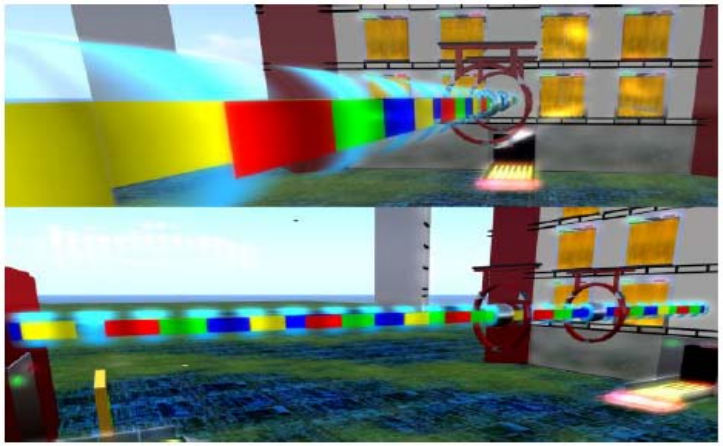


Figure 3: Pipeline Showing Packet Flow

Figure 5: The Attack Console and Chat Window

ISACA®
Trust in, and value from, information systems
Jeddah Chapter

VWs Information Security Application

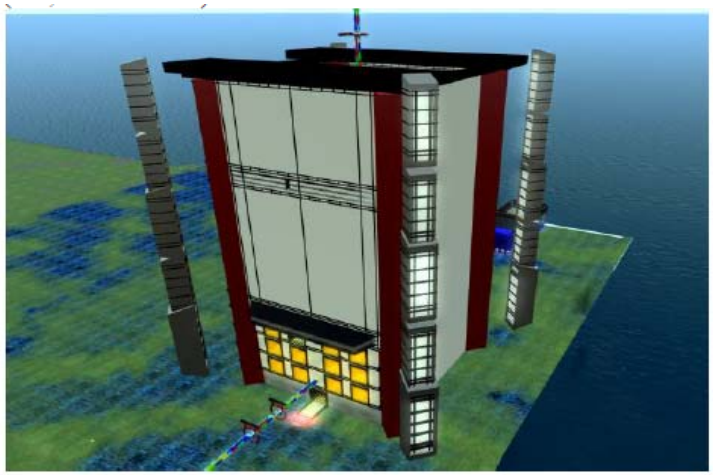


Figure 4: Gateway Connected to the Cloud (Internet)

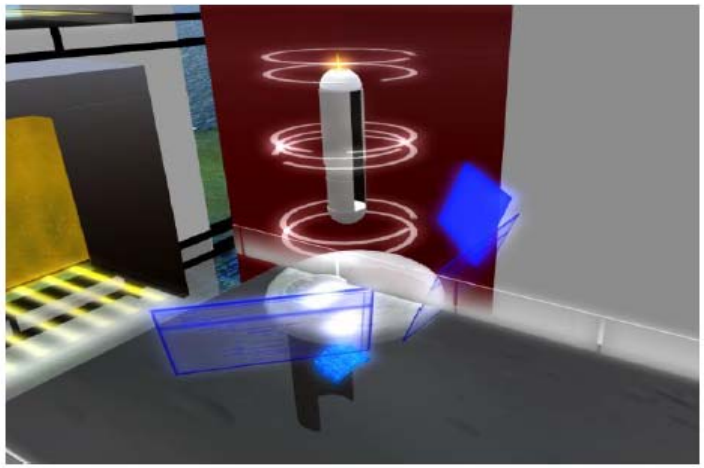


Figure 9: Patch Delivery Service

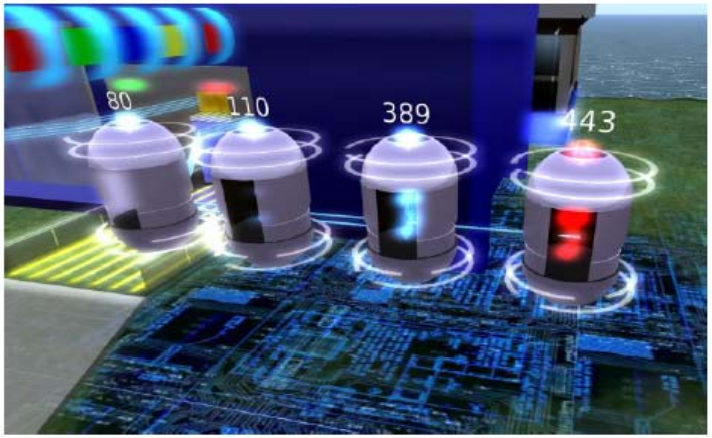


Figure 8: Ports at the Blue Team Base

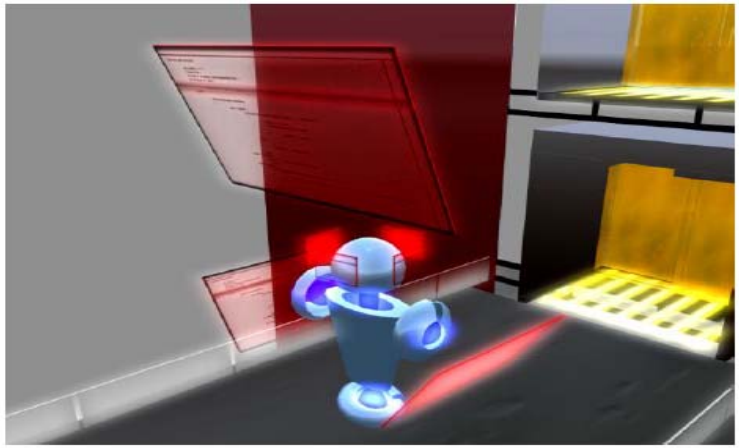


Figure 10: The Consultant Bot Issuing Quiz Questions

VWs benefits and challenges

Benefits

- Collaboration across agencies
- Collaboration from anywhere
  - Telework
  - Collaborative work projects
  - Education and training
  - Continuity of Operations
- Synchronous Communication
  - Text chat
  - Voice
  - Body movement
  - Desktop sharing
- 3-D representation of objects
- Intelligent agents and bots
- Avatar personalization
- Presence and Transference
- It is fun

Challenges

- Emerging Technology
- Learning Curve: Movement and actions are not intuitive
- Client on agency/organization desktop image
- Security (working across agencies)
  - Avatar level
  - Network level
- Content
  - Cost of development
  - Ability to share content
- Worlds are not interoperable
- Identity
- Privacy

What is next..

What in it for Information Assurance professionals?
- Learning, training and Teaching (Interactive Education)
- Orientations
- Projects management (collaborations & communication)
- Virtual teams (different places but real time)

How virtual worlds can change the profession? What will add?
- Simulation of IT controls, risks and countermeasures
- Simulation of information security environments
- 3D Visualization of Enterprise Architecture, Attacks, network flow
- Role-playing scenarios

How to audit and secure the VWs?
- What controls, risks and threats to organizations?
- What are the skills needed to audit VWs?

Demonstration 3

Demonstration 4

Questions & Discussion

ISACA®
Trust in, and value from, information systems
Jeddah Chapter