I-Room: a Virtual Space for Intelligent Interaction

Low cost, simple setup, mixed-reality meetings spaces and operations centres

http://openvce.net/iroom


Social Networking
Collaborative Systems
Instant Messaging
Community Knowledge
Agent Presence
Semantic Web
Content Management
Teleconferencing
Intelligent Agents
Web Services
3D Views onto the Internet
VoIP

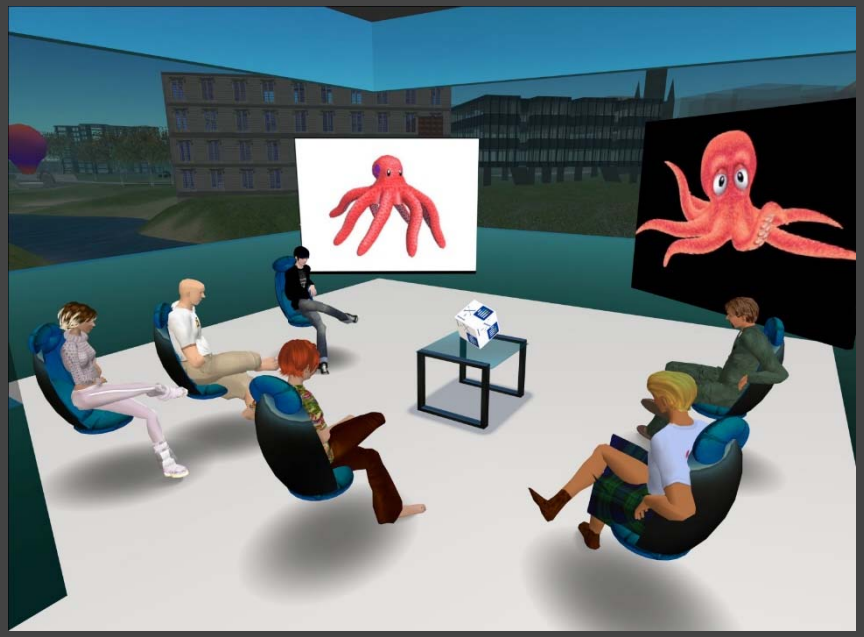
I-Room Introduction

- I-Room provides a 3D virtual space with multiple work zones, designed for collaborative and brain storming style meetings
- I-Rooms are used in the I-X research on intelligent collaborative and task support environments
- The main feature of the I-Room is the link up with external web services, collaboration systems and intelligent systems aids

I-Room: a Virtual Space for Intelligent Interaction

Distributed collaborative team support for production and review in the creative industries – with Slam Games and international partners

Tutorial and commercial spaces – with The Whisky Shop, Scotand



I-Room: a Virtual Space for Intelligent Interaction

Operations Centres, Brainstorming Spaces, Team Meeting Rooms, Training and Review Areas – USJFCOM, US Army, DARPA

I-Room: a Virtual Space for Intelligent Interaction

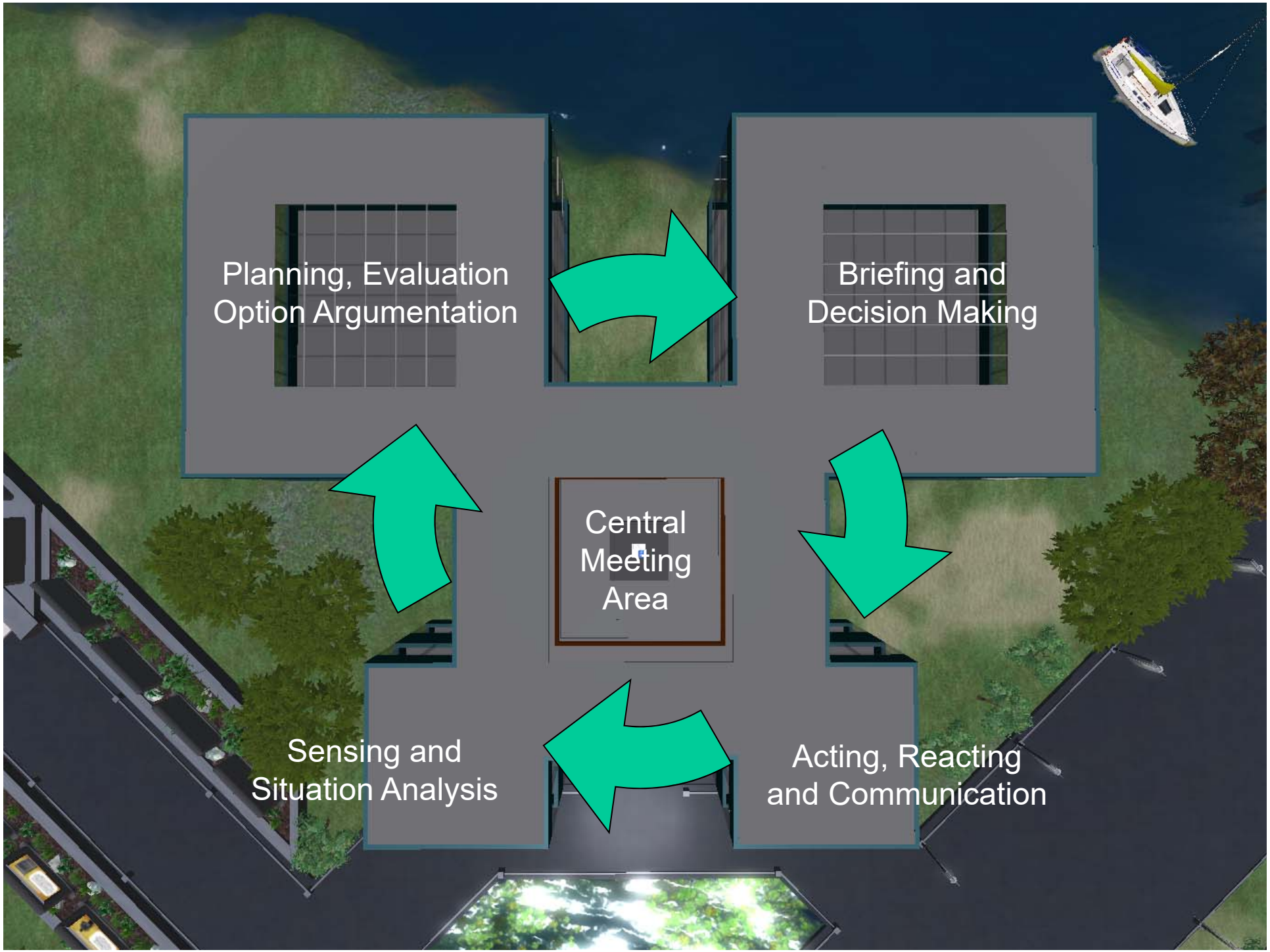
Operations Centres for Mixed Agency Operations – with EADS/Airbus

http://vue.ed.ac.uk/associates/eads/

I-Room Applications

- Virtual collaboration centre
- Business teleconferencing
- Team Meetings for project and product reviews
- Product Help Desks
- Design to Product - product lifecycle support
- Environment, building and plant monitoring
- Health and safety at work, disability awareness
- Intelligent tutors, guides and greeters
- Active demonstration pavilions


OpenVCE


Planning, Evaluation
Option Argumentation
Briefing and
Decision Making
Central
Meeting
Area
Sensing and
Situation Analysis
Acting, Reacting
and Communication


Second Life
Me
Communicate
World
Build
Help
Advanced
Develop
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I-Zone, VCE - General
Search
I-Room: A Virtual Space for Intelligent Interaction
Trinity Rooney
Owner
Theo Outlander
Diana Grizot
Firery Broome
Honda SL Design Team
JohnFrej Herzfeld
Light Sequent
Innovator
Serious Starsider
WorkingRelationships
Deb Quintessa
OpenVCE
Ai Austin
Tonito Alderson
Sato Michinaga
RL <--> SL Scripter
AI Supercharge
Owner
Viking Zinner
Vue Associate
SP Pizzicato
Academy of HRD
Rachelle Munro
"Relay for Life"
Member
Pamela Varthader
Member
Joelle Yalin
isi help desk
shamblesguru V
DougCaldwell Unplugged
Membe
ED Czavicevic
PeterG Ember
OpenVCE Event Reception
Acknowledged
Anders Wildcat
Open University UK
Gardy Flux
Chat Relay
Clear Clickers
I-Room Helper (off)
Team A
AO OFF

Requirements for Effective Distributed Task-centric Collaboration

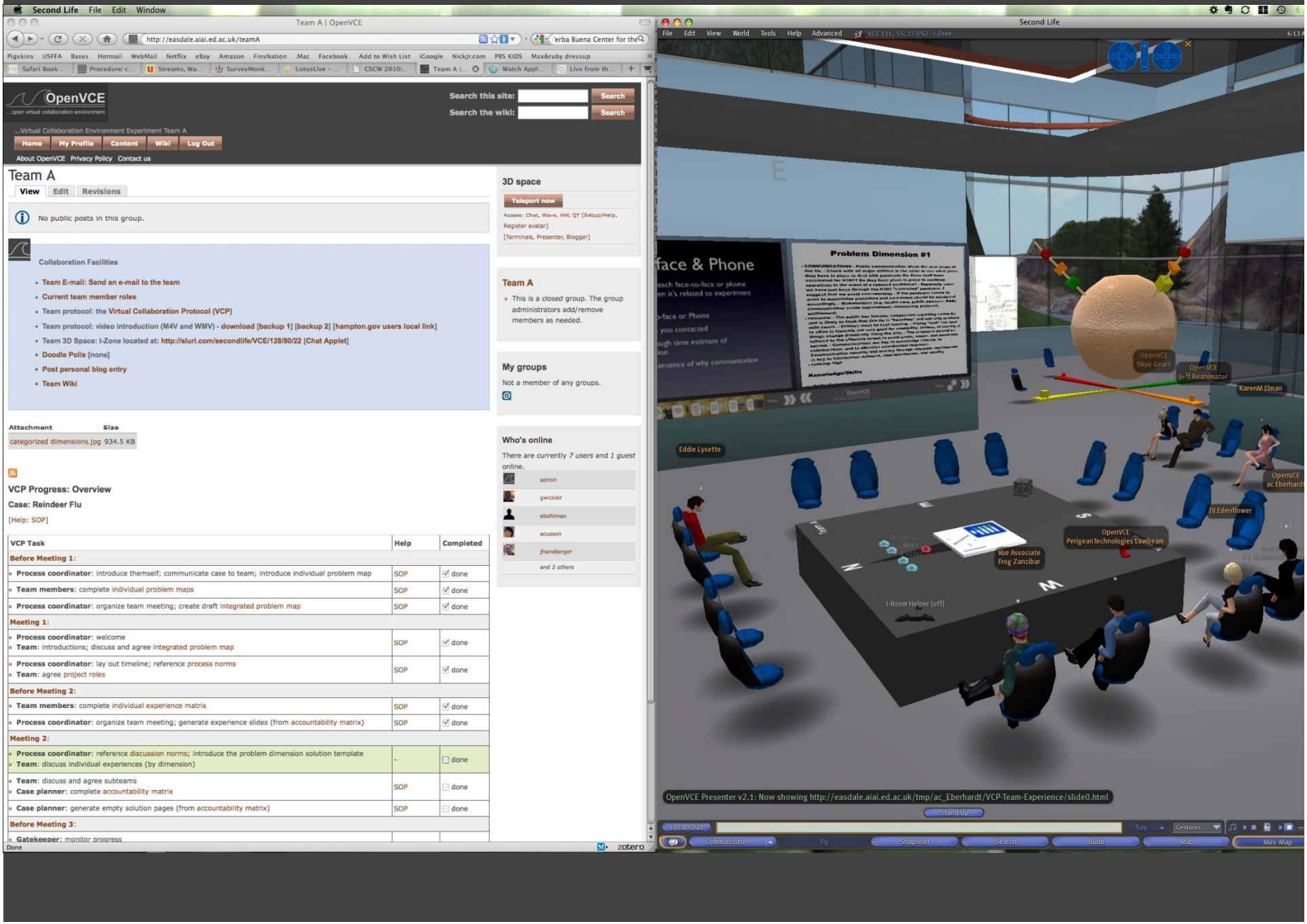
- Mix of physical operations centres and remote access
- Bring in experts for improved analysis and option generation
- Mix of synchronous and asynchronous activity
- Share community knowledge and experience
- Share Standard Operating Procedures and Lessons Learned

Communication, Collaboration and Task & Process Centric Activities

Open Virtual Collaboration Environment

- Web-based Collaboration Portal
  - Drupal CMS
  - Also explored Facebook, Google Groups, Yahoo Groups, Ning Groups, Grou.ps, Joomla, Linkups to external web services and widgets
- Virtual World 3D Space
  - Second Life™
  - OpenSim (allows for secure use, potentially behind a firewall, e.g. US government)
- Virtual Collaboration Protocol
  - Standard Operating Procedures
  - FAQ and Tips
  - Collaboration Protocol (Rob Cross, University of Virginia)
- Community Tools
  - AIAI I-Room – a Room for Intelligent Interaction
  - CMU Catalyst Community Knowledge Base
  - Concept Maps, and Experimental 3D Model Visualizations

OpenVCE


Second Life File Edit Window
Team A | OpenVCE
http://easdale.aiai.ed.ac.uk/teamA
OpenVCE
Search this site:
Search the wiki:
Search
Home
My Profile
Content
Wiki
Log Out
About OpenVCE Privacy Policy Contact us
Team A
View
Edit
Revisions
No public posts in this group.
Collaboration Facilities
Team E-mail: Send an e-mail to the team
Current team member roles
Team protocol: the Virtual Collaboration Protocol (VCP)
Team protocol: video introduction (M4V and WMV) - download [backup 1] [backup 2] [hampton.gov users local link]
Team 3D Space: I-Zone located at: http://slurl.com/secondlife/VCE/128/80/22 [Chat Applet]
Doodle Polls [none]
Post personal blog entry
Team Wiki
Attachment Size
categorized dimensions.jpg 934.5 KB
VCP Progress: Overview
Case: Reindeer Flu
[Help: SOP]
VCP Task Help Completed
Before Meeting 1:
Process coordinator: introduce themself; communicate case to team; introduce individual problem map SOP done
Team members: complete individual problem maps SOP done
Process coordinator: organize team meeting; create draft integrated problem map SOP done
Meeting 1:
Process coordinator: welcome
Team: introductions; discuss and agree integrated problem map SOP done
Process coordinator: lay out timeline; reference process norms
Team: agree project roles SOP done
Before Meeting 2:
Team members: complete individual experience matrix SOP done
Process coordinator: organize team meeting; generate experience slides (from accountability matrix) SOP done
Meeting 2:
Process coordinator: reference discussion norms; introduce the problem dimension solution template
Team: discuss individual experiences (by dimension) - done
Team: discuss and agree subteams
Case planner: complete accountability matrix SOP done
Case planner: generate empty solution pages (from accountability matrix) SOP done
Before Meeting 3:
Gatekeeper: monitor progress
3D space
Teleport now
Team A
This is a closed group. The group administrators add/remove members as needed.
My groups
Not a member of any groups.
Who's online
There are currently 7 users and 1 guest online.
admin
gwickler
ebohlman
acusson
jhansberger
and 2 others
Second Life
Problem Dimension #1
Eddie Lysette
OpenVCE Skye Gears
OpenVCE Jeff Reanimator
KarenM Elman
DJ Edenflower
OpenVCE PerigeanTechnologies Lowbeam
Vue Associate Frog Zanzibar
I-Room Helper (off)
OpenVCE Presenter v2.1: Now showing http://easdale.aiai.ed.ac.uk/tmp/ac_Eberhardt/VCP-Team-Experience/slide0.html
Stand Up
Local Chat
Communicate
Fly
Snapshot
Search
Build
Map
Mini-Map

<I-N-C-A> - Activities and Plans

- An “upper ontology” for activities and plans, basis of O-Plan and I-X/I-Plan systems and used to integrate many other agent based systems in helpful Environment projects.
  - “I” – Issues to be addressed
  - “N” – Nodes to be included – e.g. Activities
  - “C” – Constraints of various types
  - “A” – Annotations, e.g. rationale

- Very abstract to allow for representation of all aspects of activities, plans, stories, agent behaviours, agent capability, tasks, objectives, purposes, etc.

- Allows for knowledge acquisition, representation, communication, formal analysis, system manipulation, etc.

- Actually more general and aimed at also describing designs, configurations, etc. as well as plans.. An ontology of “synthesised artifacts”.

- Tate, A. (2003) <I-N-C-A>: a Shared Model for Mixed-initiative Synthesis Tasks, Proceedings of the Workshop on Mixed-Initiative Intelligent Systems (MIIS) at the International Joint Conference on Artificial Intelligence (IJCAI-03), pp. 125-130, Acapulco, Mexico, August 2003.
- Tate, A. (2000) <I-N-OVA> and <I-N-CA> - Representing Plans and other Synthesized Artifacts as a Set of Constraints, AAAI-2000 Workshop on Representational Issues for Real-World Planning Systems, at the National Conference of the American Association of Artificial Intelligence (AAAI-2000), Austin, Texas, USA, August 2000.

OpenVCE

Virtual Worlds for Simulation & Training

- MOSES – Military Metaverse, US Army other US government agencies
  http://moses.militarymetaverse.org
  http://blog.inf.ed.ac.uk/atate/moses

- VOICCE – Virginia's Operational Integration Cyberspace Center of Excellence
  http://openvce.net/voicce

- International Virtual Emergency Exercises (IVEE) and Multinational Planning Augmentation Team (MPAT)
  http://openvce.net/event-ivee1 http://openvce.net/mpat

- Simudyne SimuGrid in OpenSimulator


Phoenix Firestorm-Release v4.4.2.34167 - Ai Austin
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Douglas Maxwell@http://cc.opensimulator.org:8002/
Stephen.Xootfly @vibe.bio-se.info@http://vibe.bio-se.info:9000/
Nikolay Suslov@http://cc.opensimulator.org:8002/
Ai Austin@http://cc.opensimulator.org:8002/
Fred.Appleby @hg.viewtwo.net@http://hg.viewtwo.net:8654/
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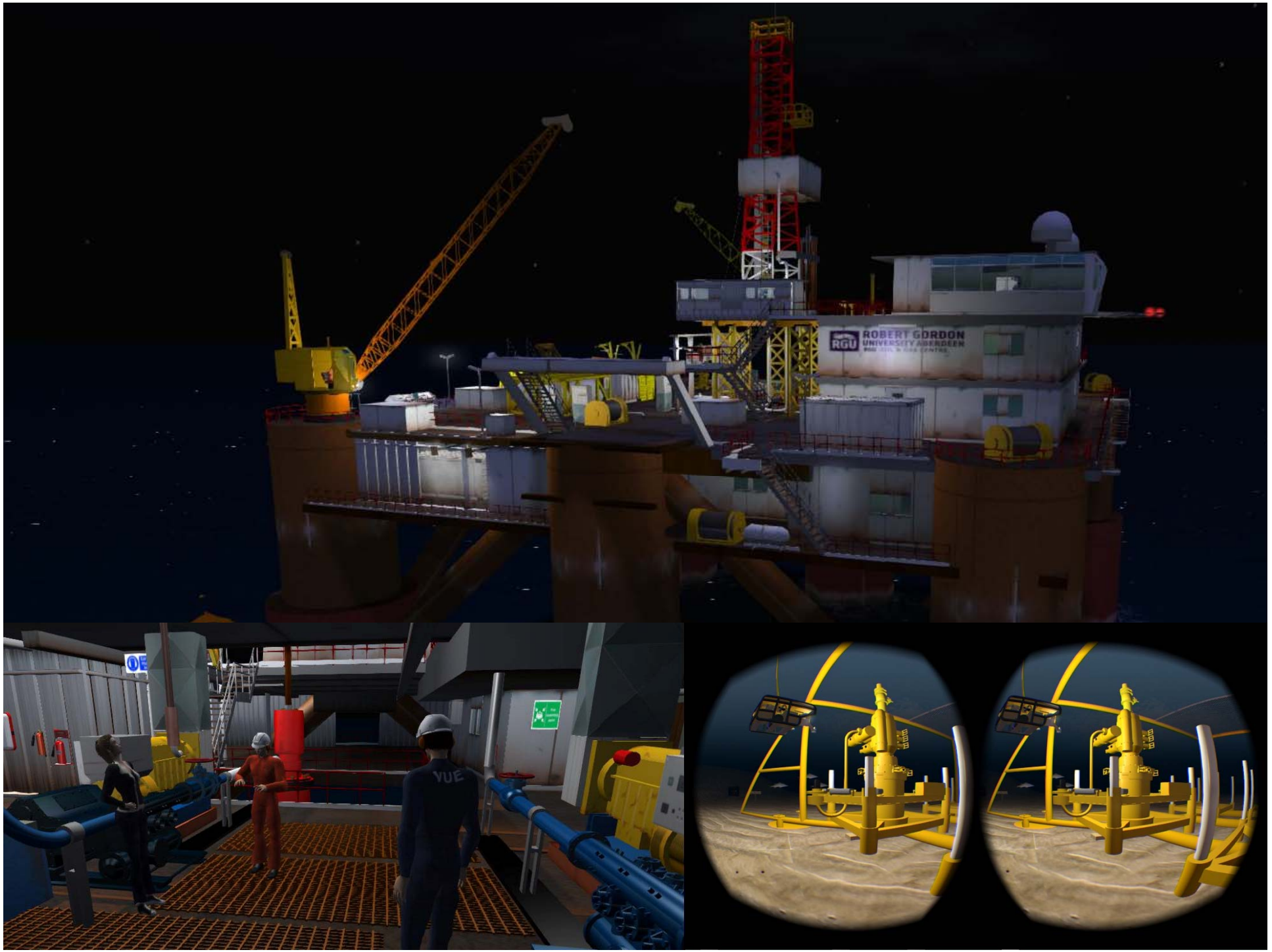
Angel GlobalCoach@http://hg.osgrid.org:80/
Dan Lake
Cinder.Biscuits @lfgrid.com@http://lfgrid.com:8002/
BlueWall.Slade @gateway.bluewallvirtual.net@http://gateway.bluewallvirtual.net:8002/
Robert Adams@http://hg.osgrid.org:80/
Gwenette
BlueWall.Slade @gateway.bluewallvirtual.net:8002: Cinder - thanks for working with us to get parts in the viewer :)
BlueWall.Slade @gateway.bluewallvirtual.net:8002: .
Fred.Appleby @hg.viewtwo.net:8654: Good idea Robert
Cinder.Biscuits @lfgrid.com:8002: of course, and i still have more to do.
Stand
Nearby Chat
MOSES


ROBERT GORDON
UNIVERSITY ABERDEEN
RGU

Helpful Environment

The Future of AI

The "Helpful Environment": Geographically Dispersed Intelligent Agents That Collaborate

Austin Tate, *Artificial Intelligence Applications Institute, University of Edinburgh*

AI's first 50 years have given us powerful techniques and tools, some which have found significant and valuable application. AI technology helps many people on a regular basis, both directly and indirectly, through the goods they use, through the services they receive, and in the course of their work. The promise of ubiquitous computing,

A future network of sophisticated sensors, protection, and repair systems could be integral to clothing, communications devices, transportation systems, buildings, and the environment. These would form the basis for a distributed, adaptable, and resilient "helpful environment."

sensor grids, home robots, and Web services is an exciting new driver for AI that should see its reach extend still further into our everyday lives. AI's role in underpinning much of the emerging Semantic Web is one example already of how widely we'll use the methods in the future.

Imagine an environment where sophisticated sensors and autonomous or semiautonomous diagnosis, protection, and repair systems are integral to clothing, communications devices, vehicles, transportation systems, buildings, and the environment. These would form the basis for a distributed, adaptable, and resilient "safety net" for every individual and organization at personal, family, business, regional, national, and international levels.[1] In natural-disaster-prone areas, government legislation, building codes, and insurance requirements would ensure that all future PDAs, communication devices, vehicles, and buildings include appropriate sensor and actuator systems to assist both their users and others nearby. Systems would adapt and respond to emergencies whether or not communication were possible. Where feasible, local help would be used, with appropriate calls on shared services facilitated, whenever this is both possible and necessary. Through this framework, requests for assistance could be validated and brokered to available and appropriate services in a highly distributed market fashion. Services would be provided to individuals or communities through this network to add value and give all sorts of assistance beyond the emergency response aspects. In emergency situations, the local infrastructure would be augmented by the facilities of the responder teams at any level from local police, ambulance, and fire response, all the way up to international response. An emergency zone's own infrastructure could be augmented on demand by laying down temporary low-cost sensor grids and placing specialized devices and robotic responders into the disaster area.

Emergency response challenges

The United Nations Office for the Coordination of Humanitarian Affairs (http://ochaonline.un.org) is one of the international bodies that are charged with assisting in international crises. OCHA's primary functions are to

- develop common strategies for response,
- assess situations and needs,
- convene coordination forums,
- mobilize resources,
- address common problems, and
- administer coordination mechanisms.

These challenges face any group or organization that intends to help in a crisis.

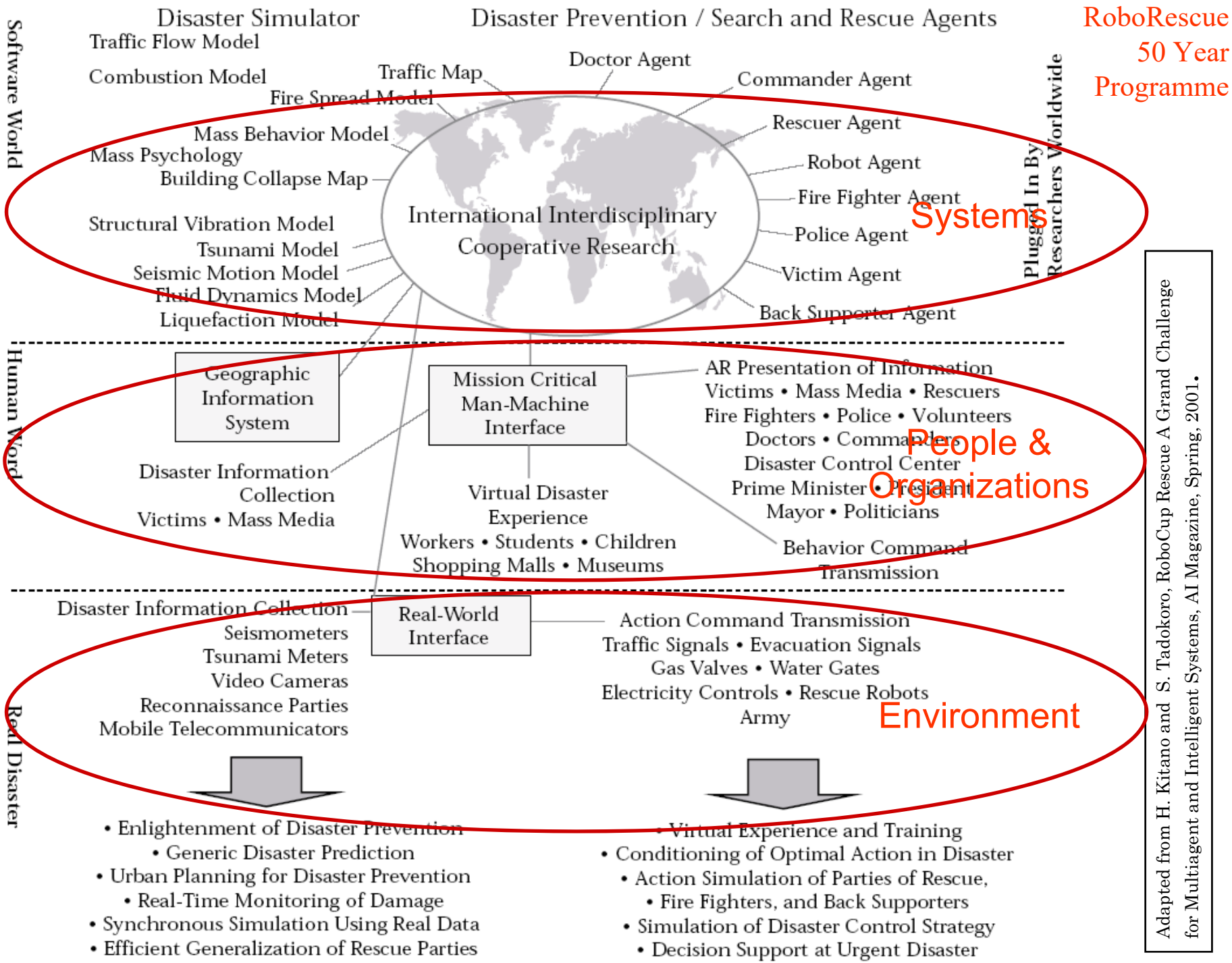
Local or regional governments are often responsible for the event handling, planning, coordination, and status reporting involved in emergency response. They must harness local response capabilities to augment their own by calling on other resources. Figure 1 shows the Tokyo Metropolitan Government's emer-

1541-1672/06/$20.00 © 2006 IEEE
Published by the IEEE Computer Society

Tate, A. (2006) The Helpful Environment: Geographically Dispersed Intelligent Agents That Collaborate, Special Issue On "The Future of AI", IEEE Intelligent Systems, May-June 2006, Vol. 27, No. 3, pp 57-61. IEEE Computer Society.

The creation and use of task-centric virtual organizations involving people, government and non-governmental organizations, automated systems, grid and web services working alongside intelligent robotic, vehicle, building and environmental systems to respond to very dynamic events on scales from local to global.

- Multi-level emergency response and aid systems
- Personal, vehicle, home, organization, district, regional, national, international
- Backbone for progressively more comprehensive aid and emergency response
- Also used for aid-orientated commercial services
- Robust, secure, resilient, distributed system of systems
- Advanced knowledge and collaboration technologies
- Low cost, pervasive sensor grids, computing and communications
- Changes in codes, regulations, training and practices



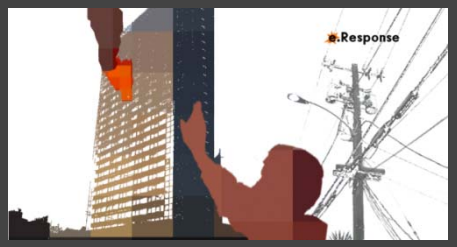
Adapted from H. Kitano and S. Tadokoro, RoboCup Rescue A Grand Challenge for Multiagent and Intelligent Systems, AI Magazine, Spring, 2001.

Helpful Environment Related Projects

- CoAKTinG (Collaborative Advanced Knowledge Technologies in the Grid) – also I-Rescue (Kobe Earthquake), AKT e-Response (Oil Spill & Plane Crash) and EU OpenKnowledge e-Response
  - Linking issue handling, argumentation, process support, instance messaging and agent presence notification
  - Range of natural, industrial and other emergency scenarios
- CoSAR-TS (Coalition Search and Rescue – Task Support)
  - Use of OWL ontologies and OWL-S described services to describe components
- Co-OPR (Collaborative Operations for Personnel Recovery)
  - Use of OWL ontologies and OWL-S described services to describe components. Policy driven agent communication. Sense making.
- FireGrid
  - to establish a cross-disciplinary collaborative community to pursue fundamental research for developing faster than real time emergency response systems using the “Grid”
- e-Response
  - Creation and use of task-centric virtual organizations to respond to highly dynamic events on scales from local to global
  - Flood (OpenKnowledge), metropolitan emergency and industrial accidents (AKT), tall buildings (Project AIBO) scenarios
- OpenVCE.net
  - Open Virtual Collaboration Environment mixes web 2.0, social network, structured wiki and 3D virtual world meeting spaces (I-Room)
  - Support for Helpful Organizations such as WoSCR, KSCO, MPAT

Collaborative
ADVANCED KNOWLEDGE TECHNOLOGIES
CoAKTinG
in the Grid

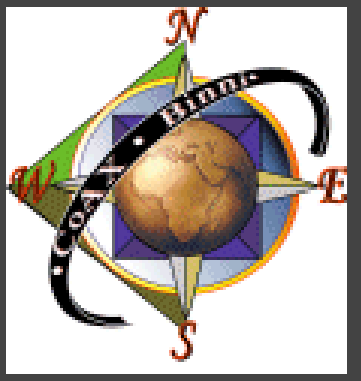
FireGrid



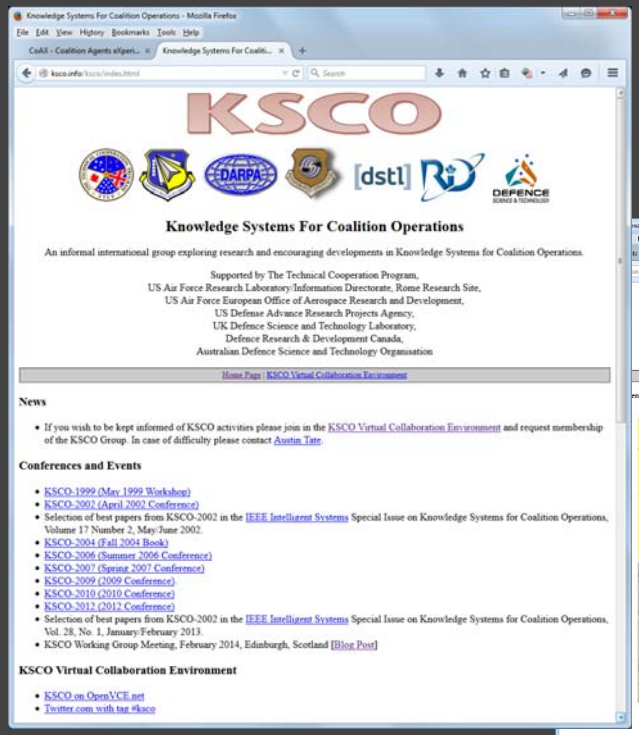
OpenVCE

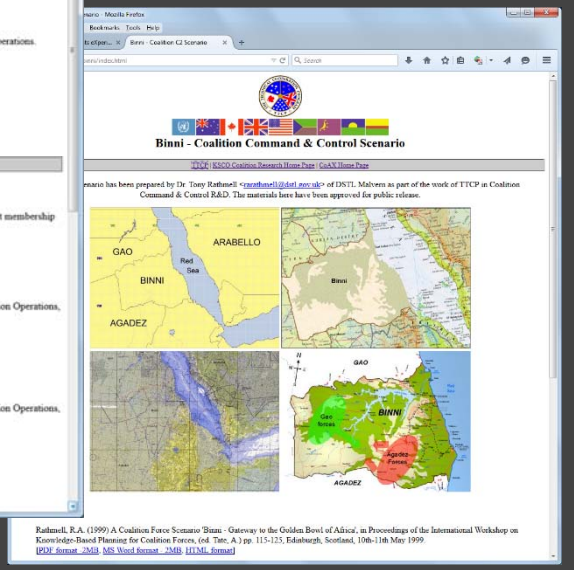
CoAX – Coalition Agents eXperiment

- CoAX (Coalition Agents eXperiment) Technology Integration Experiment (TIE)
  - Under DARPA Control of Agent Based Systems (CoABS) program
  - With The Technical Cooperation Program (TTCP) – involving USA, Canada, UK, Australia
  - 30 organisations in government, academia and industry
  - Led by AIAI
- CoAX Binni 2000 and 2001
- CoAX Binni 2002



KSCO





- Resources
  - Binni Scenario
  - Agent Systems
  - DAML/OWL(-S)
- http://ksco.info/coax
- http://ksco.info/binni
- http://ksco.info/ksco


Vue – Virtual University of Edinburgh
OpenVCE – Virtual Collaboration Environment
I-Room – a Virtual Space for Intelligent Interaction
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