



ARCHITECTS OF CHANGE





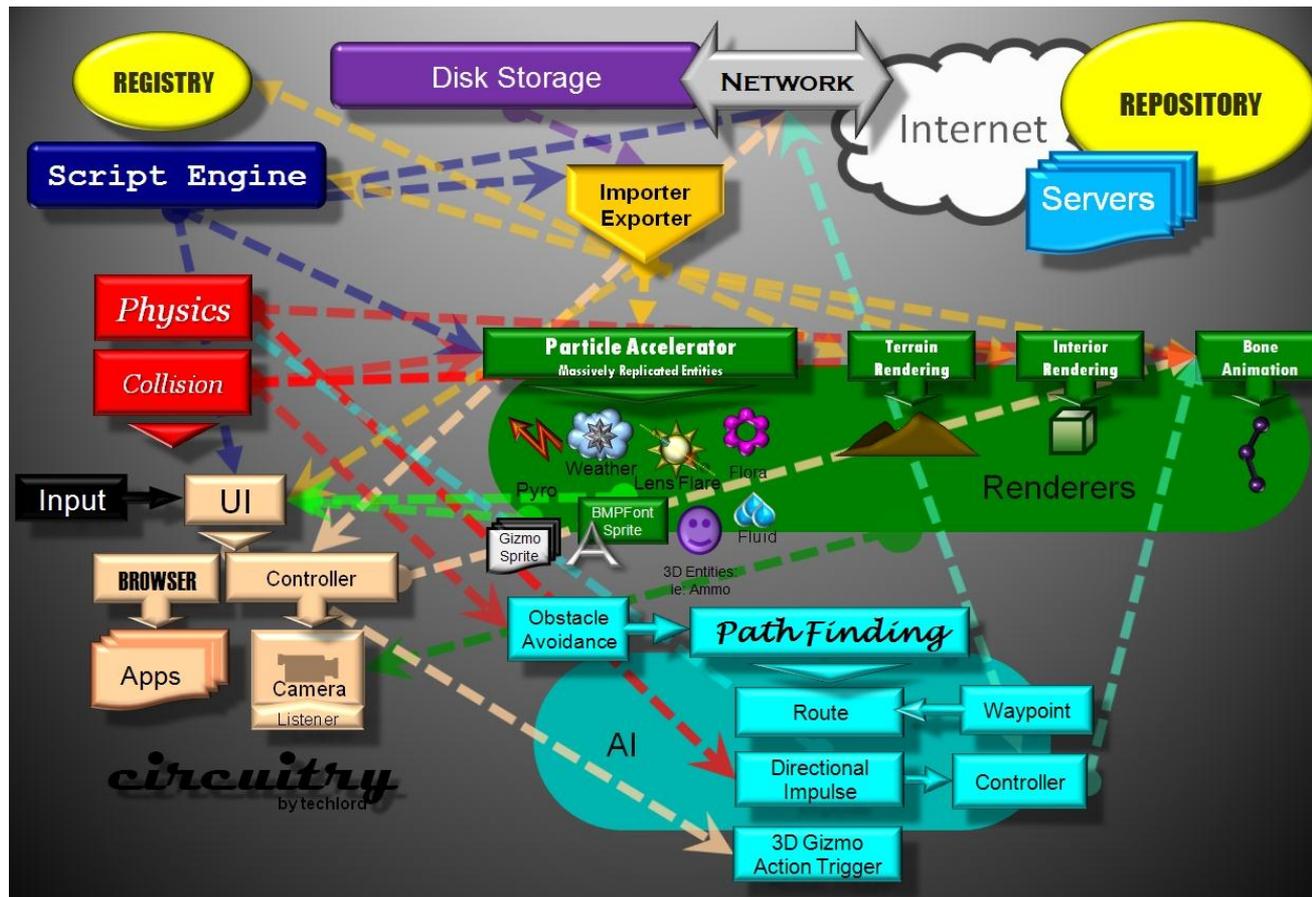
Determining the Appropriate Level and Modalities of Technical Training for Use with Virtual Worlds

**Human Factors Engineering TAG
October 2010**



Research Challenge

How is evaluating a simulated event in a virtual world different from other types of evaluation?

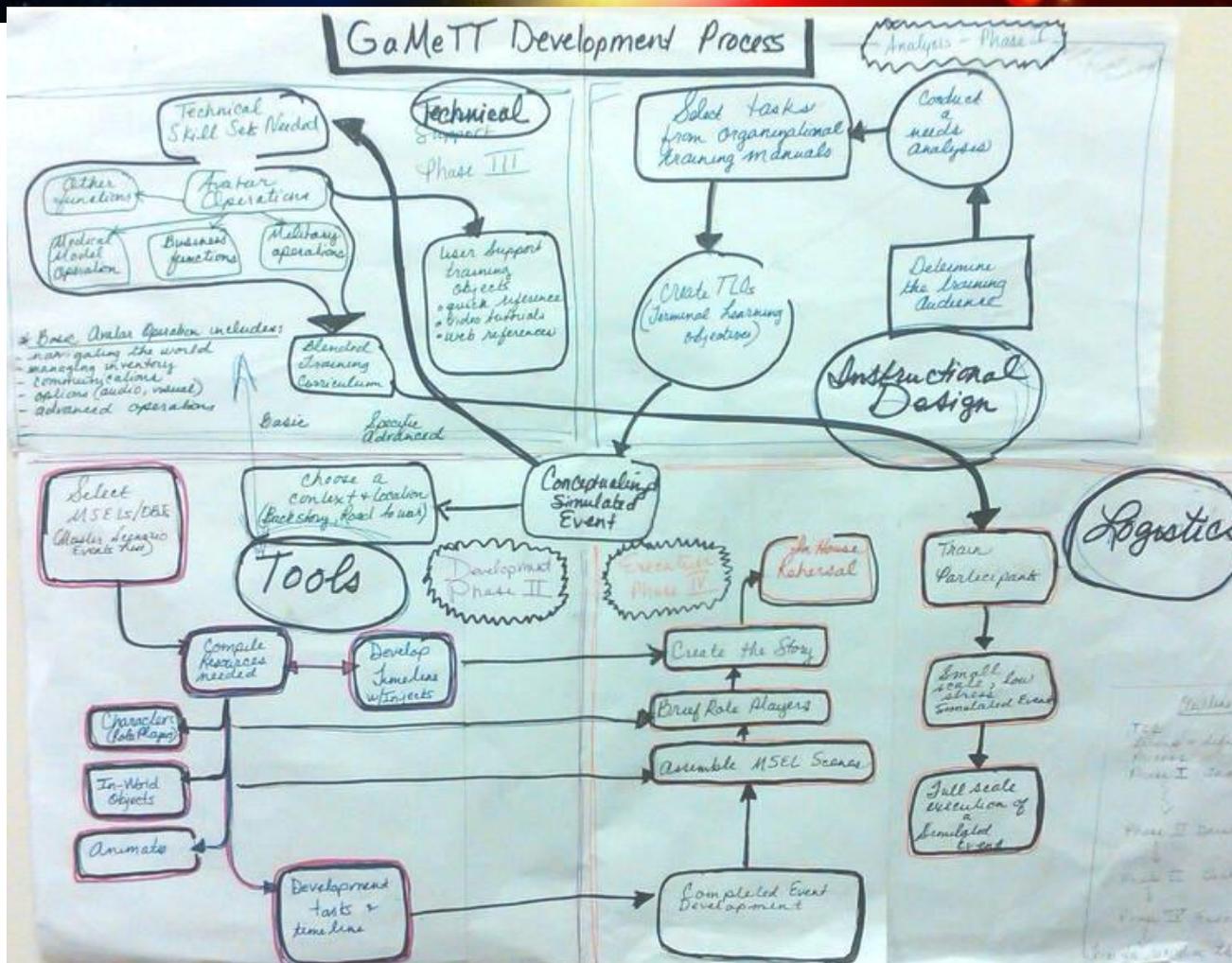




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Non-linear

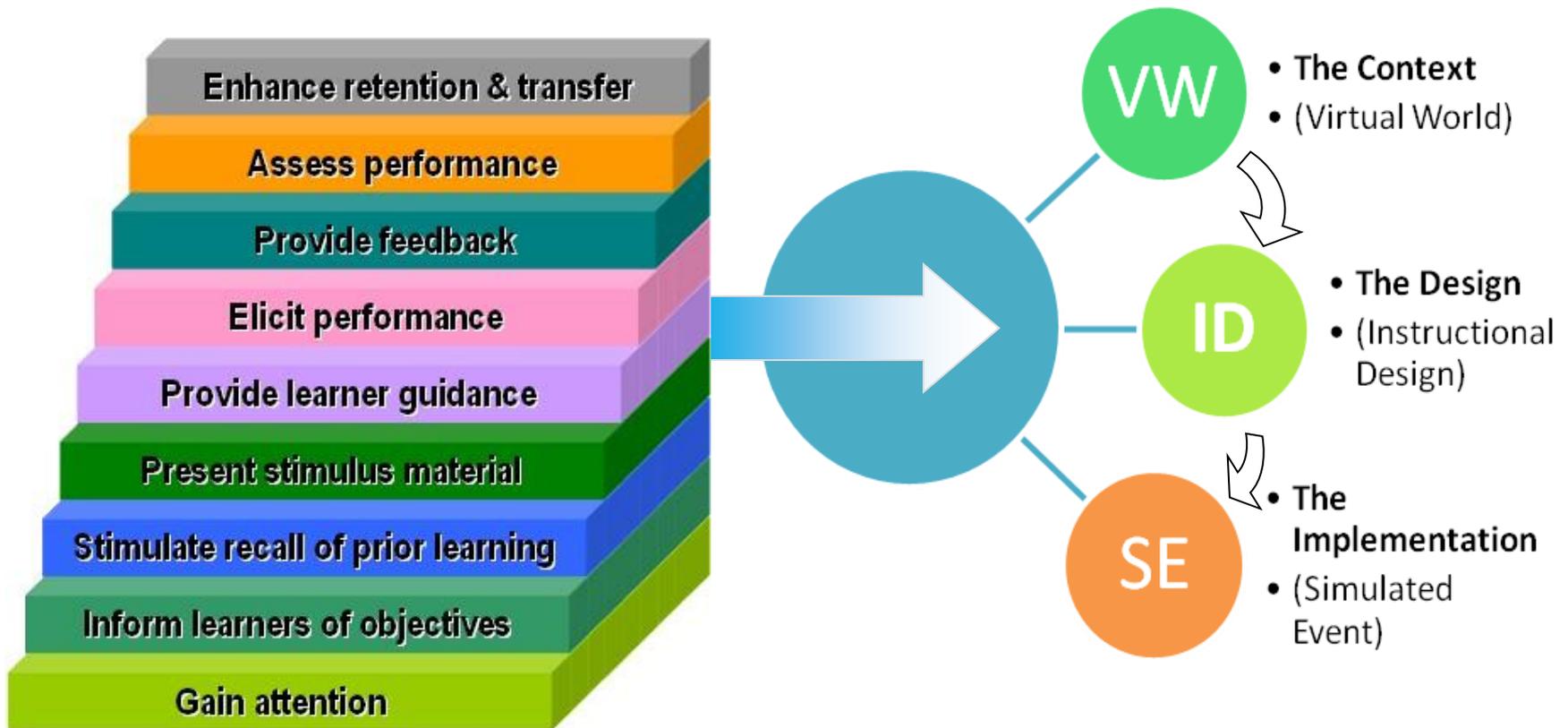




Investment

Extended development
+ Software Licenses

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Phase I - setting the conditions for learning

- The Context (Virtual World)
- The Design (Instructional Design)

- Phase II – Gap Mitigation
 - The Context (Virtual World)
 - The Design (Instructional Design)



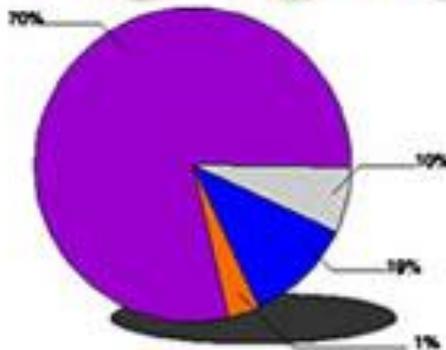
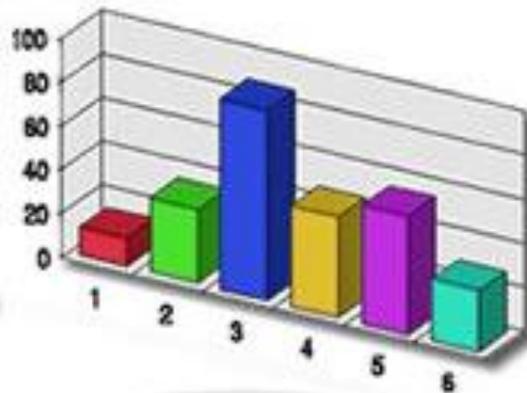
Phase III – Implementation of the Simulated Event

- Achievement of learning outcomes
- Effectiveness of the mitigation of gaps
- Degree of success of overall implementation
- Factors related to degree of success



Phase IV— Evaluation

- Analysis
- Trends



Use Case



Is technology a
barrier to
success?



Questions

- What type of support is needed for distributed teams?
- How much training/support is enough?
- What is the best mode of delivery and assistance for distributed teams?
- What prerequisites should be suggested for participants?
- Is technical skill level a barrier to virtual world usage and can support remove that barrier if it exists??



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Simulated Events in Virtual Worlds





Simulated Events in Virtual Worlds

Orchestrated an EMEDS simulated event in a virtual world

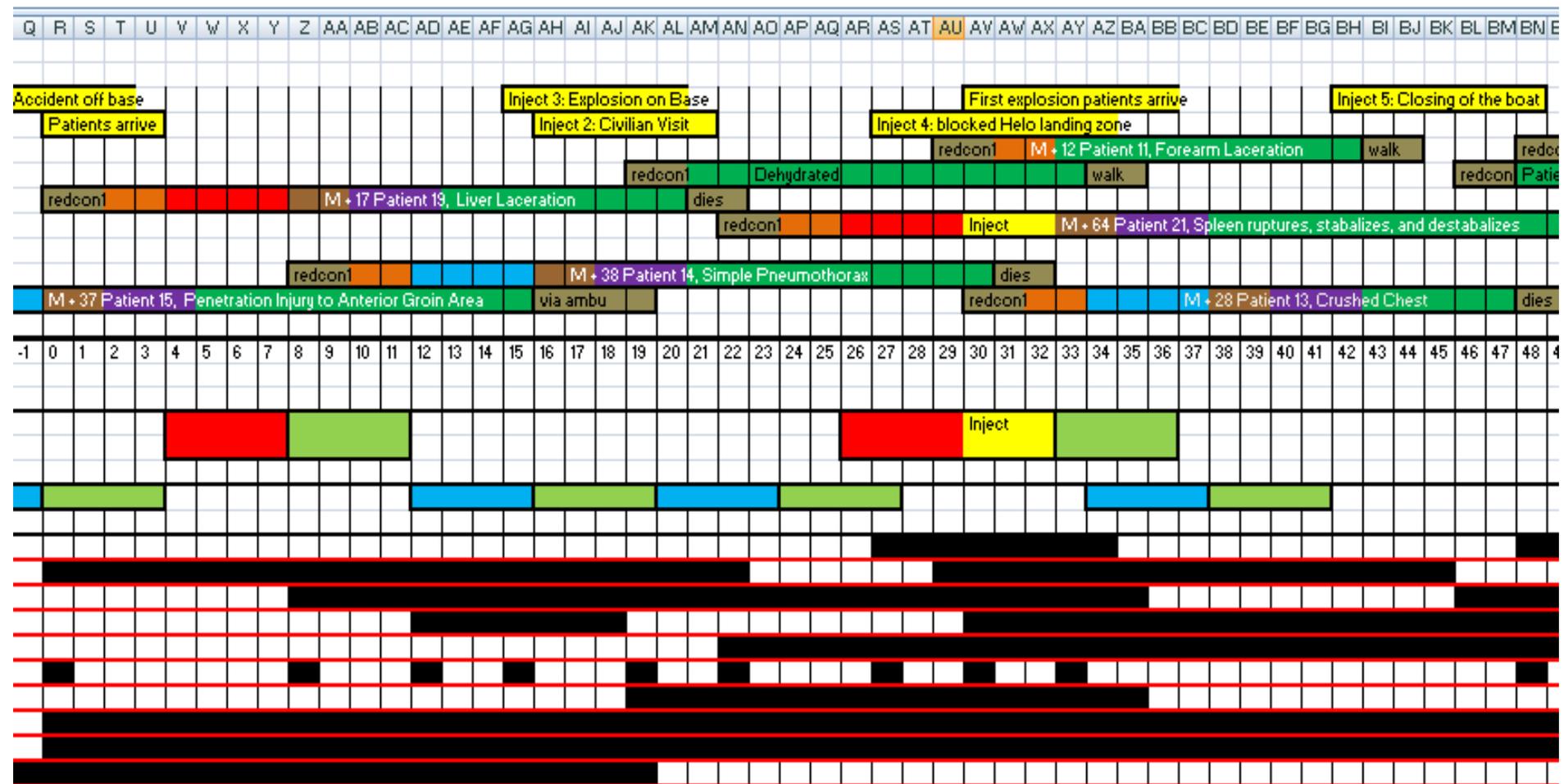
- Realistic
- Non-scripted
- Event driven
- Live action



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Simulated Events in Virtual Worlds





Simulated Events in Virtual Worlds

In-house role players

- Transportation
- POI medics
- Patients
- Additional actors





Simulated Events in Virtual Worlds



Eastern Virginia Medical School Standardized Patients

- Partnerships
- Professionals injury simulators
- Added sense of realism



Simulated Events in Virtual Worlds

Technical Support

- Scenario logistics
- Coordination
- Behind the scenes technical support





Simulated Events in Virtual Worlds

Auxiliary roles

- Interns
- Program support





Simulated Events in Virtual Worlds



- ## Observer/Controllers
- AAR facilitators
 - In-world support



Live Event





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Demographics

Demographic

Sex

Male

59%

Female

41%

Age

18 – 25

20%

26 – 35

17%

36 – 45

31%

46 – 55

28%

Over 55

3%

Total 36 and over

62%



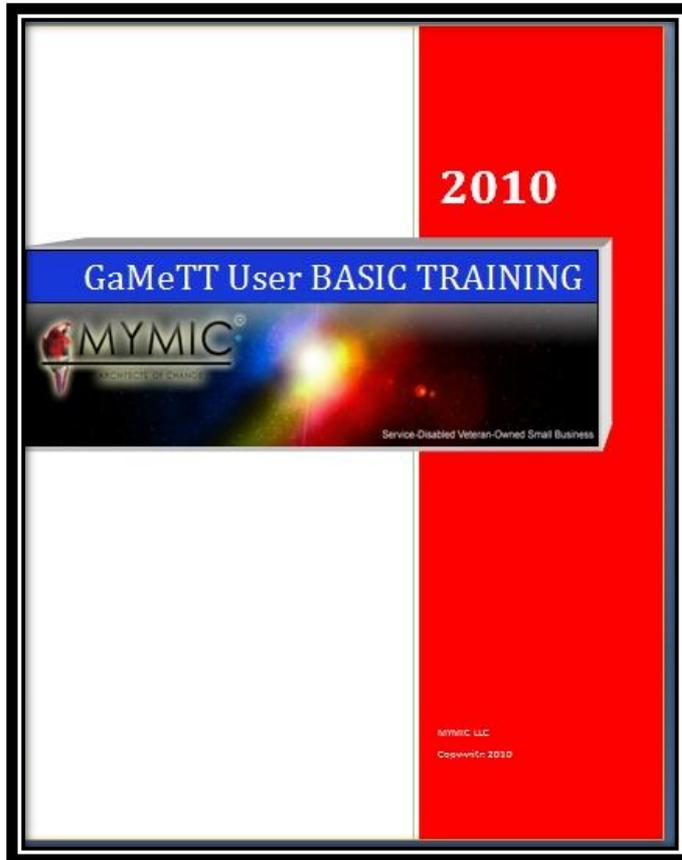
Demographics

Technical Skill Level

	Technically proficient	68%
	Self-reported proficient	64%
Game Players		
	First Person Shooter	64%
	Massive Multiplayer Online	79%
	Console Games	57%
	2D Games	50%



Types of Support



Augmented Support Tools

- Prototype event management tools
CoMeTT and iPad
- Cell phones
- Text messages





Reference

- /hosp - to run the medical model
- /olive - to access more commands
- /avatar List - to see every in world
- Spacebar to talk in world V - to talk in-world
- F12 to detach from the bed
- Right click to:
 - attach to the bed
 - Sit down
 - drive a car
 - bring up the bedside monitor

Radio Call Signs

- EMEDS Command - (Role Players)
- EMEDS 1 - all participants
- DUSTOFF 1 - role player for helicopter/medic
- MEDIC 1 - Role Player ambulance driver



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Reference Cards

OLIVE™ Quick Reference Sheet

MESSAGES PANEL
 (click on arrow to expand)
 Select the **CHAT TAB**
 and enter text into the
 white space to chat

GESTURES
 To use **GESTURES** click
OLIVE buttons or use
 number keys

PRESENCE MENU
 Click **PRESENCE**
 to see who is in World

 Click **SUMMON TO**
 so they can teleport
 to your location

TALK
 Push Space Bar
 to **TALK**
 when talking a wavy line
 appears over your head

CONTROL BAR
 Click **TELEPORT DESTINATIONS**
 to change locations
 Click **CHANGE STATUS**
 to change
 your availability
 Click **VIEWPOINT**
 to change views
 Move Volume sliders
 to adjust headphone
 or microphone
 Click **SIDEBAR VIEW**
 to make your **OLIVE**
 window smaller
 during presentations
 (for Presenters only)

MOUSE CONTROLS
 Left Button- click **OLIVE**
 buttons and Messages

 Middle Button
 Zoom view in/out

 Right Button
 Select objects in world

 Left Shift+ Move Mouse
 Changes Camera Angle
ESC toggles between
 mouse-look and mouse-
 pointer modes

SELECTING AND USING
 Right click an object
 (chairs, screens) to
select it.
 Choose options from
 the menu that opens

MOVEMENT KEYS

forward
 W
 Q A S D E
 back
 S

Tip: Use arrow keys instead

SCREENS
 To select a screen
 right click on it
 (the border turns orange)
 Click **RELEASE**
 to de-select

 To view a screen
 up close,
 select the screen,
 then click
ZOOM IN

 When Presenting
 click **PROMPTER**
 to see the presentation,
 even when
 facing the audience

CONTROL SCREENS

GESTURE

MOVE

TALK

MOVE



Simulating Geographical Distribution

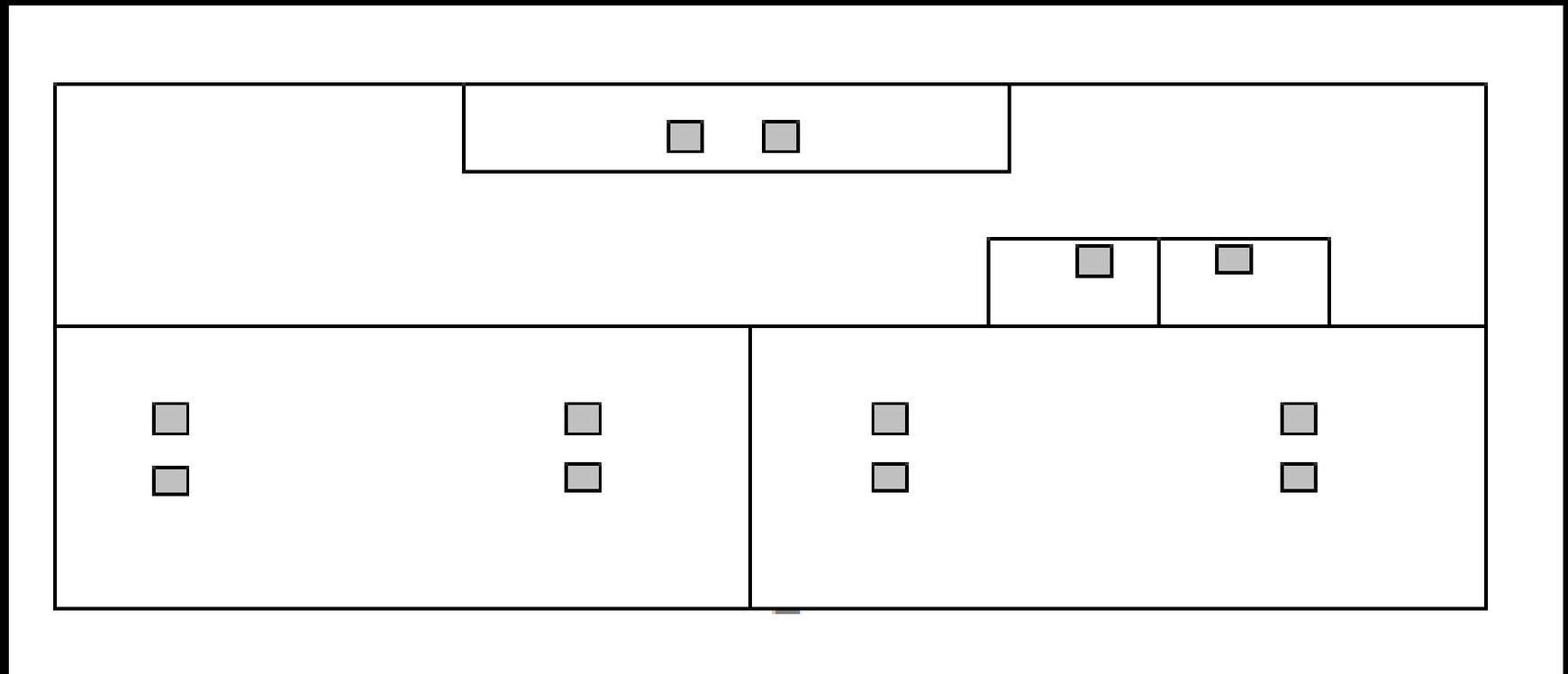




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Simulating Geographical Distribution





Simulating Geographical Distribution





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Simulating Geographical Distribution





Simulating Geographical Distribution





Analysis of Results

Looking for clues about how to best train and support geographically dispersed participants of a simulated event in a virtual world



Post Survey Responses

Post Survey Statement– “During the training session, I was provided with enough support to be able to adequately use the technology”

- 18% of participants agreed or highly agreed
- 25% were neutral



Post Survey Responses

Post Survey Statement– “Someone was available to answer my questions about the virtual world used in this training session.”

- 18% of participants agreed or highly agreed
- 4% were neutral



Commentary

Given that implementation of the technology beyond the experiment would occur in a virtual environment (rather than face to face as tested); this finding of could be a positive comment. Three sessions of the experiment were conducted and all participants completed the exercise using the technology.



Commentary

- For participants who are gamers or highly technical, results show the expectation for support may be very high
- For participants who have low technical skill level, the technology could become a barrier to accomplishing learning objectives without intensive support



Lessons Learned

- A thorough online tutorial should be created
- In-world reference objects are needed
- “Read aheads” would be helpful
- Virtual seminars with live question and answer periods after the online tutorial may be necessary



PRE Survey Results

- 18% had high expectations for the training
- 64% were neutral about their expectations for the training

- 14% of the participants believed that virtual training could be effective for their team
- 43% were neutral about whether virtual training could be effective for their team



PRE Survey Results

- 88% of the participants where were either neutral or negative about their expectations for the effectiveness of virtual training for their team
- 84% of the participants where were either neutral or negative about their expectations for the effectiveness of virtual training for their team



POST Survey Results

ONE HALF of all participants said they learned as much or more from the simulated event as they did from the live Patriot Exercise

39% said they would use the skills learned in the simulated event in their job as an EMED and 25% were neutral.



Commentary

- There is some indication of movement towards more positive attitudes about virtual training
- Results show that some transfer did occur – but we have no baseline statistics to gauge the success of the results

- Anecdotal results due to the small sample size
- Some volunteerism (self-selection) involved in becoming a participant
- Experiment environment was not optimal



Commentary





Wrap-up

Comments?

Questions?



Conclusion

Thank you for your time!

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