EVIVA

Evaluating the Education of Interpreters and their Clients through Virtual Learning Activities

Report to accompany Deliverable 4.1

The development of the 3D virtual environment used in the evaluation studies WP6

Robert Gittins
Panos Ritsos
Jonathan Roberts
[rgittins@bangor.ac.uk]
[p.ritsos@bangor.ac.uk]
[j.c.roberts@bangor.ac.uk]

December 2014

Project coordinator: Sabine Braun

The EVIVA project has been funded with support from the European Commission. This report document reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

1. INTRODUCTION

This report describes the design decisions in the development of the EVIVA 3D virtual environment, enhanced from the earlier IVY Project development. The report will particularly cover the designed environment choices and decision making process to meet the challenges of the EVIVA project. Particular attention will be given to the 3D virtual environment layout and construction changes, (used for the evaluation studies in WP 6), and improvements to the navigation, animation, and also the tools for monitoring user movements and behaviour adopted. Finally how the EVIVA enhanced environment will support the dissemination and exploitation.

2. The 3D Virtual Environment

The IVY EVIVA 3D development environment used the features of Second Life - a third party, public facing 3D virtual environment platform, to create a simulation learning space for professional practice in interpreting (i.e. spoken-language translation). The bespoke environment allowed trainee interpreters to practise their interpreting skills, whilst their potential clients (e.g. practitioners and students of law, medicine, business etc) can observe, explore and familiarise themselves with the practical challenges of how to work with an interpreter. Both user groups can also interact live in the virtual space.

2.1 Overview and Main Challenges

The environment is essentially a set of buildings containing a suite of customised rooms/locations in which interpreter-mediated communication would typically take place, e.g. meeting, conference and presentation rooms, a court room, a doctor's surgery, a tourist office etc. The virtual locations create credible interpreting scenarios, i.e. the idea is to facilitate situated-ness (sense of presence) as an important prerequisite for learning, simulation and immersion.

The main challenges were concerned with taking the best solutions discovered during the development of the 'IVY Visitor Centre' 3D environment and bringing them up to date - in respect of graphical quality and evolutionary functional development, for deployment in a new virtual building, a purposely designed re-configuration for extended 'Live Mode' and 'Practice Mode' scenarios. The newly designed Evaluation Centre building was based loosely on the previous IVY Visitor Centre design but with double the available space for the evaluation scenario rooms.

In respect of the 3D environment development work, the technical team were challenged to investigate and develop the best available 3D virtual environment platform, navigation and animation systems. The Second Life platform proved an invaluable and cost effective platform to research, prototype and develop these functions to operational level, i.e. the 3D space with respective functional properties, a user Heads-Up-Display (HUD) and importantly, a user friendly web based interface used as an administration tool. The feedback during development resulted in a highly adaptable and increasingly user friendly 3D space, adding value to the student interpreter, practicing interpreter and the clients of interpreters, learning experience. The Second Life platform was thoroughly researched and exploited as far as the third party technology would allow.

Second Life falls short in a number of technical areas, not least in that it is a third-party platform with a number of imposed technical boundaries. The Bangor team investigated next generation

opportunities using alternative platforms, modelling and animation tools with the aim of providing next generation environment, wholly secure, and without third party constraints. The technical team investigated numerous ways of using emerging technology to address the challenges of such things as photo-realism, scalable environments, dynamic light, animation fluidity towards facial expression, and lip synchronisation and the prospect of a level of artificial intelligence. This work has been on-going and targeting the development of a prototype demonstrator for what was termed a 'high-fidelity' room described later in this report.

In respect of navigation development, there were two basic systems available. Firstly a simple self-navigation action for walking or flying initiated by standard user keyboard controls, and secondly by teleporting using a bespoke menu system built by the Bangor team to incorporate a purpose built 'Heads-Up-Display' (HUD - described later).

During the early stages of development an unforeseen practical navigation challenge emerged. The task was to provide a usable solution of navigation for a visually impaired student. Bangor and Surrey staff, along with student users at Surrey, met during an induction workshop where a timely opportunity was taken to discuss the issues. The discussions resulted in a series of trial and error prototype ideas being developed and tested. The work resulted in a bespoke HUD for visually impaired students. These students were able to use a personal menu-enabled teleport system for point to point teleporting on request. The solution provided a system that gave an option to trigger an additional on screen navigation HUD - to open the additional, more visually suitable, personal room locations menu.

Returning to the technical challenges – particularly to developing a user experience that wouldn't distract the user from the core interpreter learning experience, a great deal more attention was given to new-user induction to the 3D learning environment in Project EVIVA. The poor understanding in the use of equipment, inexperience in using and adjusting basic function settings and overcoming simple problems in navigating the environment, lead to frustration and distraction during class sessions. Special attention was given to induction, learning resources and improving the user friendliness of those resources. To support this action a new 3D building was provided adjacent to the Evaluation Centre called 'The EVIVA Learning Zone' where novel methods of delivering simple messages and instructions in the use of the 3D environment movement, navigation, viewing, audio and hazard avoidance were provided. One method devised was to use instructional posters, with comic-strip style graphics, provided user sociable explanations and instructions. The graphical elements were innovative, in that they have not previously been observed in such circumstances – that is to say for their adoption for use in 3D learning environments. Again, the comic strip system is operational in the EVIVA Learning Zone at the time of writing and will be the subject of future user feedback and development.

The EVIVA Learning Zone resources were demonstrated to students at a workshop in Surrey University. Students and staff were shown best practices through demonstrations in the Learning Zone. The session covered such challenges as; how the 3D space was best navigated, how to interact with objects, how to view documents correctly, how to use audio systems and particularly how to get out of annoying situations with the environment. The EVIVA Learning Zone offered a safe practice space prior to using the EVIVA Evaluation Centre, by allowing the new user common experiences with – seating, tables, desks, presentation screens and documents, and to gain the most from self-learning, practice and repetition, in the safe Learning Zone. The aim was to make the interpreter learning experience trouble free from the environment. The Learning Zone will be described again in more detail later in this report.

2.2 Visitor Tracking Sentinels

To keep track of visitors and user attendance a bespoke tracking system of sentinels (Fig: [1]) was deployed at strategic points in buildings, adjacent training rooms and in reception areas.

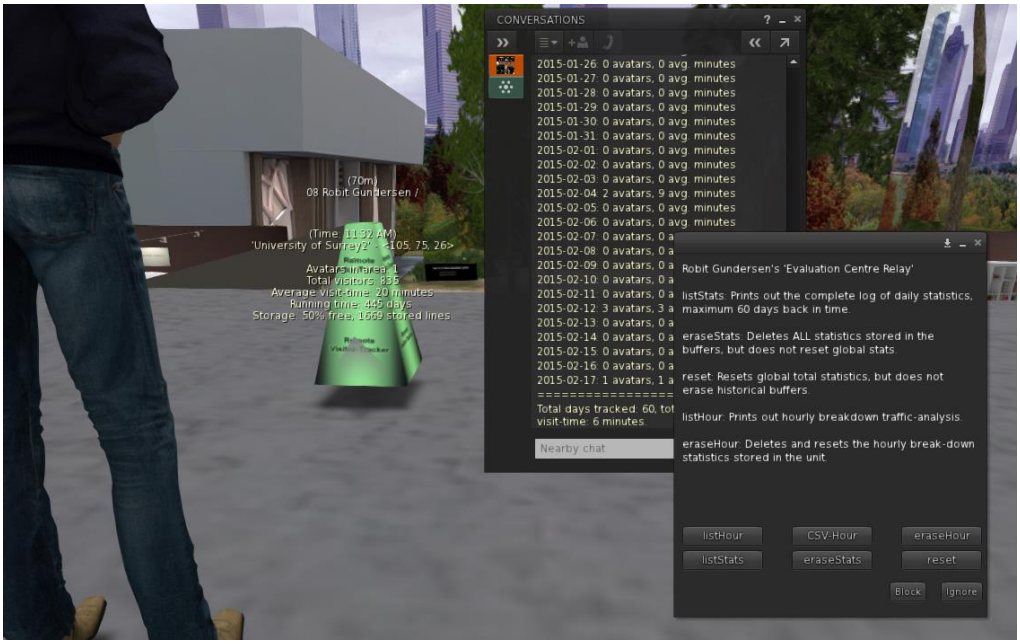


Fig:[1] Typical Visitor Tracking Sentinel
Deployed at strategic points throughout the EVIVA buildings complex

The information gained recorded time of entry, duration and exit time. Other features showed what the users were doing through the addition of single characters behind the name of the avatar in hover text-display above the sentinel:

T: User is typing.
A: User is away.
B: User is busy.
F: User is flying.
S: User is sitting.
W: User is walking.

Although the system trials provided some marginally useful statistics about visitor movement in specific areas, the combined results were not deemed robust enough, or of sufficient value in providing additionally useful information about user location interaction. Particular concern was identified because users could be deemed to be in world by the sentinel system and be present at a specific point, but in fact the user could have moved away from their PC (real world location) for indefinite periods of time – there was no way of knowing. However, the system deployment was deemed to have been a useful exercise and prompted ideas for future development beyond the scope of the EVIVA Project.

2.3 EVIVA Practice Mode Building

The EIVIVA environment has different working mode operations and bespoke buildings which are linked to the different user activities. The two modes are ‘Live Mode’ and ‘Practice Mode’, both modes have similar room layouts but are functionally very different. The live mode will be discussed in section 2.6. The ***practice mode*** (Fig.[2]) is populated with access to speeches and dialogues in different languages, which are ‘presented’ or supported by robot-avatars acting as role players. In

other words, the audio files are linked to the robots via a Heads-Up-Display (HUD) system operated by the user, to create the impression that the role player robots are speaking. The student (or practitioner), represented by his/her own avatar, interacts with the robots within the predefined interpreting scenarios, to work through selected exercises.

Fig. [2] A view of a Practice Mode Meeting Room in the EVIVA Centre with the HUD attached on the user's viewport

The students use the HUD (Fig: [3]) to choose the working mode (Live or Practice), the interpreting scenario and the appropriate content (i.e. speeches in the appropriate language for her/him), i.e. selecting from menus and navigate (teleport) to the chosen scenario. The student also uses the HUD, with its integral audio player, to play and pause the speeches within the chosen scenario.

Fig:[3] A series of sample images showing the HUD Login, Menu System choices and Audio Player

2.4 Administration Tools

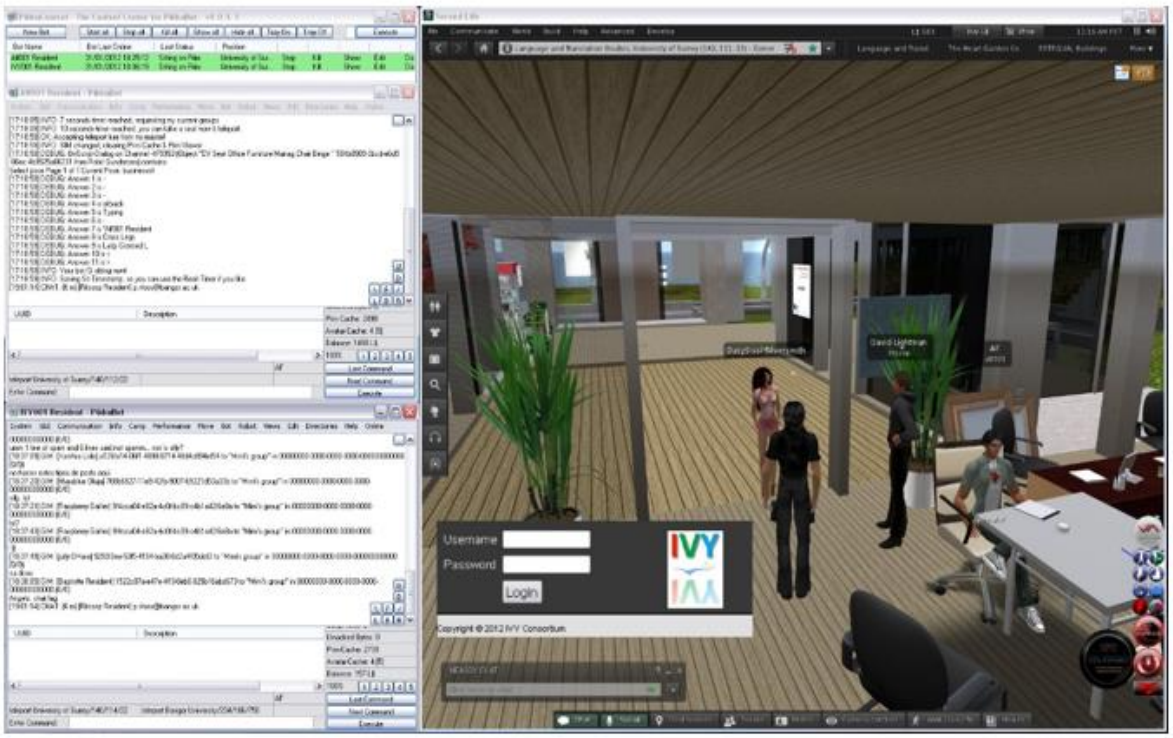
The admin ADMINISTRATION TOOL panel allows tutors to create scenarios by associating them with in-world locations, and uploading an ordered .mp3 list and textual information to Edit, delete and inspect existing scenarios and manage users (Fig: [4])

Fig:[4] Screen shots of the Web Based Administration Panels

2.5 Robots and Puppets

Two types of actors used – `puppets' and 'robots' (known by users and developers as 'bots'). Bots are essentially avatars without a user controlling them in real time. Remotely programmed Bots have a better appearance than puppets and can be controlled by 'whispers' (text-coded instructions) and through a telnet server. SL Regional restarts (SL islands of which EVIVA has two) regularly caused considerable problems – robots disappearing or not re-logging to the positions they were deployed, that lead to their much reduced use in the EVIVA Project – where puppets although less visually appealing always appeared in their correct location.

Puppets are less realistic in graphic terms, and have limited or no useful functional attributes, but are very stable. In-house built puppets, with considerable coding effort, can acquire some limited automated movement-to show marginal improvement, but that improvement relates directly to the amount of time (always very extensive) that it needs to create them. Puppets were often created and imported from development tools such as Autodesk's 'Pinocchio' Project and then completed in Maya. (Fig: [5] [6]).



Figs:[5][6] The above images show the developer control panels left and screen shots of robots, puppets and avatars together in an EVIVA scenario.

2.6 EVIVA Live Mode Building

Using the modular design format as per the origin rooms developed in the previous IVY Project, together with a series of enhancements to the scenario locations (rooms and fittings), the **EVIVA Live Mode** building and rooms were established.

In the ***live interaction mode*** shown (Fig. [7]) the student interpreters and clients may come together to carry out role play simulations. The live mode uses similar virtual locations (meeting room etc.) but in this mode the virtual rooms are not populated with robots. The students used the SL spatial voice chat function to live interact – in real time, voice interaction situations.

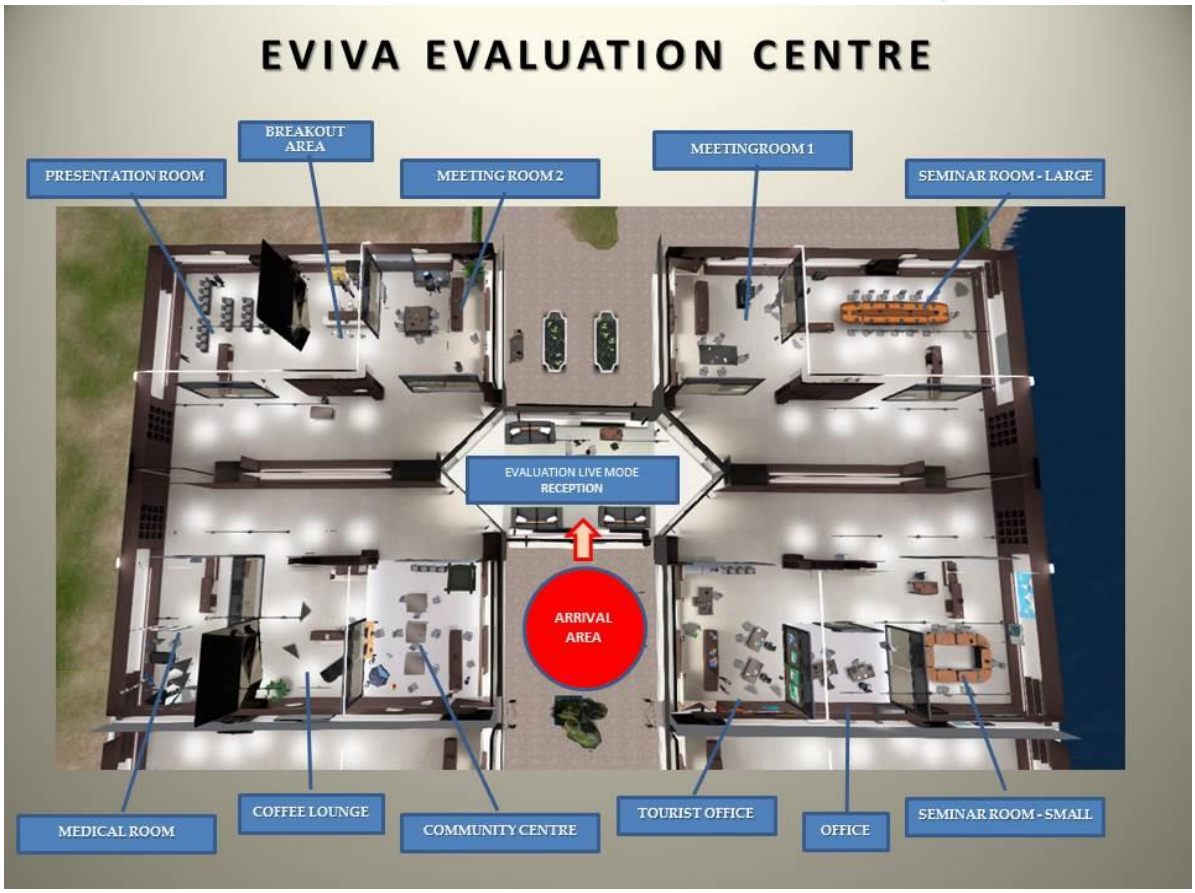


Fig: [7] The EVIVA Live Mode Building

2.7 Development Limitations

As indicated earlier in this report, the development limitations experienced are important points to consider and include; poorly supported avatar gestures, extremely limited facial expressions, unsynchronised lip movement, in addition to static environment limitations of landscape, and building confinements (described later) – are emerging features, indicating that even a small improvement would provide a considerably better service to users. These points are covered in more detail later in the report. What will unquestionably make a significant difference in the future is the development of more richly rendered objects and avatars. Particularly capturing avatar head movements, eye movements, and body language, to offer much more compelling person-to-person interaction-possibilities.

The above design points are specific to the challenges we have been dealing with during the IVY EVIVA Projects and are discussed in detail in the next sections, in addition to the specifics of the decision making process in adopting the technology used during the project.

3. Sustainable Design Standards

In order to ensure reliability and sustainability - as in the previous IVY development, EVIVA was designed to comply with the following standards of quality:

- ***Performance***: In the development process, it was assumed that users would interact with the IVY environment in real time and that multiple participants would use it at the same time. The aspects that were addressed from the outset therefore included simultaneous presence in the virtual world, audio files streaming, access locks, etc.
- ***Security***: The VE environment and the resources it contains are protected by a system of permissions granted to bona fide users to access specific areas of virtual land, island, region or individual rooms. Permissions are granted by the VE administrators.
- ***Usability***: The ease of use of the virtual facilities and functional objects, as well as the resulting user experience, were established and improved through an iterative 'Agile' process of design, development, and then both user and technical evaluation. Appropriate/timely response was given to the regular feedback.
- ***Testability***: Extensive testing was conducted to fulfil the criteria of consistency, completeness and unambiguousness of the system.
- ***Maintainability***: The development also focused from the outset on the requirement that the VE and its underlying components can be maintained by content managers and administrators after the end of the project. This also constitutes an important point of departure for the IVY exploitation activities.
- ***Extensibility***: From the outset, the implementation of the system and VE has taken into consideration future growth and the necessity to be forward-compatible. This has been facilitated by the decision to make the back-end of the system a standalone system entity that can be interfaced with alternative VEs in the future. As an essential step in this direction, the development of the systems has been based on methodologies and has used technologies that are compliant with established standards.
- ***Scalability***: The adopted SL environment platform is scalable to the extent that additional resources, in the form of virtual interpreting scenarios, monologues and dialogues can be added in the future. In addition, the web based dialogue resource system design has ensured that content enrichment is seamless, does not require re-engineering and, particularly as far as the addition of further monologues and dialogues is concerned, does not require the intervention of the developers – a featured deemed by the EVIVA developers to be a crucial point of departure for the use of the IVY environment with third parties.

Additionally, aspects relating to standards outlined above have to be seen as important prerequisites for *mainstreaming* to ensure that the interest in, and potential uptake of, the IVY/EVIVA solution by decision makers at different levels can be seamless, i.e. that the 3D virtual environment can provide a viable solution for further exploration with key stakeholders in future exploitation activities.

4. EVIVA 3D Environment Development

Using Second Life (SL) was a quick and effective way of creating a complete experience in a virtual world, particularly in terms of settings (room scenarios) and landscapes, and acquiring virtual assets - furniture, avatars and building components. A large proportion of the building process was facilitated by the SL-built tools. In addition, the collaborative and simultaneous presence of multiple users in the world was handled by the SL architecture.

However, as raised earlier, there were limitations within the SL architecture, which the forerunner IVY project had previously highlighted and documented, especially the lack of instancing, zoning and replicating which are methods commonly adopted in computer games, to allow multiple simultaneous users at a given time by dynamically replicating sections of the world corresponding to each user (or a group of users). By contrast, the world of Second Life is the same for all users and in that sense the world is static. Additional limitations, due to stringent security policies on media playback and the limited control on Non-Player Characters (NPCs), does not allow designers to control the world to maximise interactions. One way to overcome this is to design and implement a bespoke system, much like a computer game, that allows multiple simultaneous users and ensures absolute control on assets, NPCs and respective scenery.

Various alternative technologies can be used for such implementation, although using 3D technologies suitable for the web, such as Web3D or Unity3D, complements the current scenario management system. Preliminary testing on some of those technologies has been carried out and a more thorough investigation will be performed in the coming months to provide a full assessment of the possibility of creating a fully web-based 3D environment that could replace Second Life. Of particular interest is the integration of a massively multiplayer online game (MMOG) engine to the current IVY framework to allow multiple users to work collaboratively in a bespoke web-based, shared virtual world.

4.1 IVY Architecture re-use

The IVY-VE was designed and implemented using established and widely-used Java Enterprise technologies for the backend. These technologies are popular in Enterprise Systems (ES) and follow the principles of Service Oriented Architectures (SOA). SOA is a software design methodology based on structured collections of discrete software components, known as services, forming complex software applications. Each service component offers a specific set of functions and is built as a discrete piece of code. This strategy ensures reuse through the modification of the services' interfaces.

In that respect, the scenario management system of the IVY-VE, built as a discrete web application, can be a part of a greater architecture which includes more elaborate functionality for:

- User profile management and enrichment with performance analysis tools and visualisations
- Statistics and visualisations on scenario usage
- Dynamic control of NPC avatars upon scenario selection
- Avatar `puppeteering' based on tagging of the scenario audio playlists and user's actions for its playback.

All of the above enhancements require extensive development and were beyond the scope of the IVY and EVIVA projects, although the system was designed with these future extensions in mind.

4.2 Visitor Centre

Feedback from users and technical developers of 3D VLEs at the EVIVA2014 Technical event in Bangor, pointed to the difficulties of new users and particularly the steep learning curve and the challenges of 3D environments, visitor access to the IVY Island needed therefore to be carefully managed and users adequately mentored.

The IVY EVIVA Visitor Centre (Fig. [7]) was an external facing resource for academic and business users to trial and explore the virtual development. The Visitor Centre allowed users to attend mentoring sessions, trial and evaluate the potential of the IVY working modes, content and learning opportunities, and the bespoke interactive IVY HUD (Heads-Up Display) system. The Visitor Centre is situated in a dedicated virtual building which provides access to the different working modes in discrete areas of the virtual building.

Currently, Visitor Centre access is available to the Live mode and the Interpreting Practice mode, and to selected scenarios, as shown in Fig. [7].

Fig. [8]An aerial view of the original Visitor Centre showing the VE room configuration

Not only can the visitor navigate the 3D environment (e.g. by walking, flying, teleporting and using the camera controls) to gain an immersive experience of the scenarios, but s/he can also interact with the environment through the IVY HUD system. This gives the visitor the opportunity to learn how the HUD works and to access the different working modes, virtual scenarios and the content (monologues, dialogues, learning activities).

Note: External (visiting) academics and key stakeholders wishing to trial and evaluate the IVY EVIVA VLE facilities will require access to the secure IVY virtual environment. To gain the most benefit users will need to acquire and a reasonable level of proficiency in the unique skills needed to navigate and use the bespoke interactive tools. It is particularly important for evaluators to master the basics and demonstrate a reasonable level of proficiency with the tools and the virtual environment. Experience has shown that novice users experience frustration with equipment and the client (3D environment) viewer for a short period - that would certainly taint an effective evaluation process.

How to overcome this problem, with sufficient induction and preparation, will be dealt with later in this section.

The continued use of the Visitor Centre required that a **procedure** was followed for novice users, beginning with an induction to Second Life and providing a subsequent opportunity to access the Visitor Centre to receive a guided tour and mentoring support.

The rationale behind this procedure is that a complete novice visitor will firstly need to be able to comfortably navigate the Second Life 3D environment landscape. All too often, and this is evident from students and other users who missed induction classes, visitors or users of the IVY VLE are constrained and distracted from using the IVY-specific facilities by their difficulties with the 3D environment. Since a lack of experience in navigating and using the 3D world controls and settings may cloud a user's judgments of the 3D learning experience, sufficient experience in 3D environments is essential. Help from a mentor or experienced practitioner is thought to make the learning curve much faster and will avoid missing key instructions relevant to the requirements of the IVY facilities to be used later.

The procedure designed for helping users to move from a novice user to a capable user who is able to appreciate and evaluate the potential for 3D VLEs is outlined below:

1. After **first contact** with the consortium, the visitor is directed to create a free account with Second Life (www.secondlife.com) and to choose an avatar. This process will include downloading a small application – the Second Life viewing client.
2. **Induction**: After registration, the new user will log in and arrive at a public area in Second Life where practical experience begins. Contacting the IVY team for mentoring and support at this time is highly recommended. Some users will pick up the basics of 3D environments very quickly, but essential familiarisation will take some days or weeks of regular use before the greatest benefits can be gained from using the IVY Visitor Centre facilities and IVY virtual environment.
3. **Post-Induction IVY Meetings**: Having mastered the ability to navigate the virtual world, change settings, optimise graphics, connect audio devices, open and view documents and comfortably use camera controls (user viewer options in the 3D environment), the visitor will be ready to attend virtual meetings and demonstrations with IVY team mentors.
4. **IVY Visitor Centre:** Finally, after reaching a comfortable level of experience, the visitor will be able to use, evaluate and appreciate the IVY virtual environment facilities. Guided tours of the facility will help the visitor to understand the processes required for using the environment including the Heads-Up Display (HUD) and teleport systems.

The original **IVY Visitor Centre** was subsequently supported by a new building complex named the **'EVIVA Learning Zone'**, introduced earlier in the sections above. The visitor Centre would remain as a showcase and first contact reception point area, whereas the new Learning Zone would be a demonstration and mentoring area, independent of the Interpreter Live/Practice Mode infrastructure and development.

4.3 EVIVA Learning Zone

The Learning Zone (Figs.[9][10])was created to provide an advanced level of training for Student users – particularly those who were involved with the EVIVA evaluations, so they would gain a better understanding of 3D environments, avoid common problems and have a more fluid experience when using the virtual facilities. The aim was to raise the skills of users to a level where using the 3D environment was less distracting, allowing the user to get on with interpreting exercises with the minimum disruption – allowing them to concentrate on the processes of interpreting rather than the difficulties with the environment.

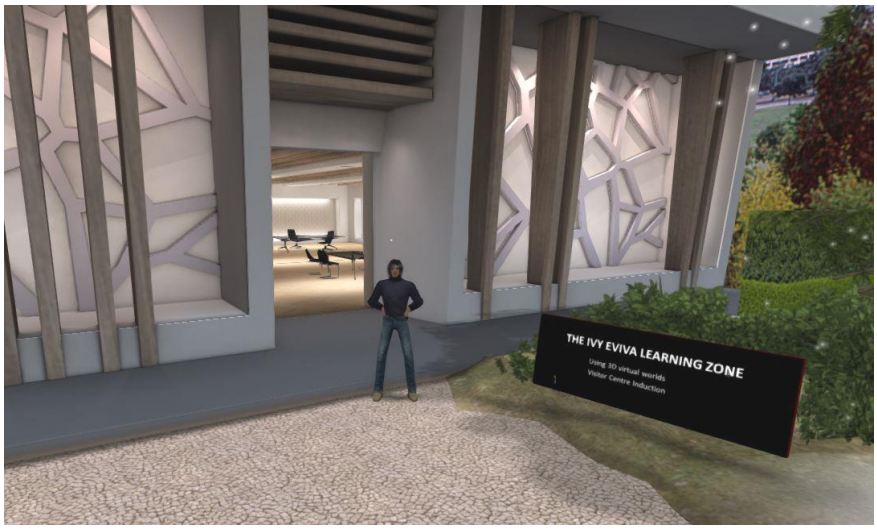


Fig: [9] The Learning Zone Entrance – Surrey Island SL

Classes were provided and supported by a system of posters in order that users could return to repeat exercises in their own time and at their own pace.

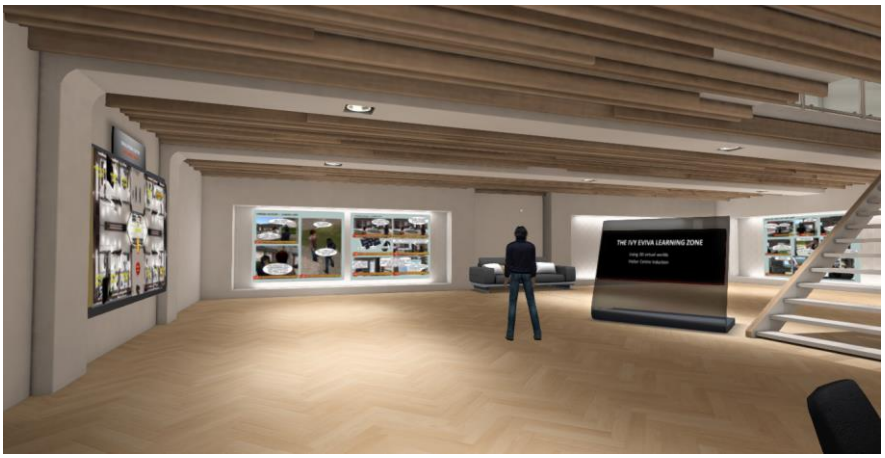


Fig: [10] The Learning Zone interior showing posters for friendly at-a-glance instruction.

Document and Poster Instructions

To reduce the need for copious amounts of text in tutorial documents, user friendly 'comic' style posters (Figs. [11][12]) were created, with at-a-glance visual stories, providing helpful instructions which could be viewed during tutorial classes or at leisure, in a non-threatening way, and again by returning users wishing to recap on the details.

Fig: [11] Typical poster in the learning zone – This poster explains how to pick up the HUD

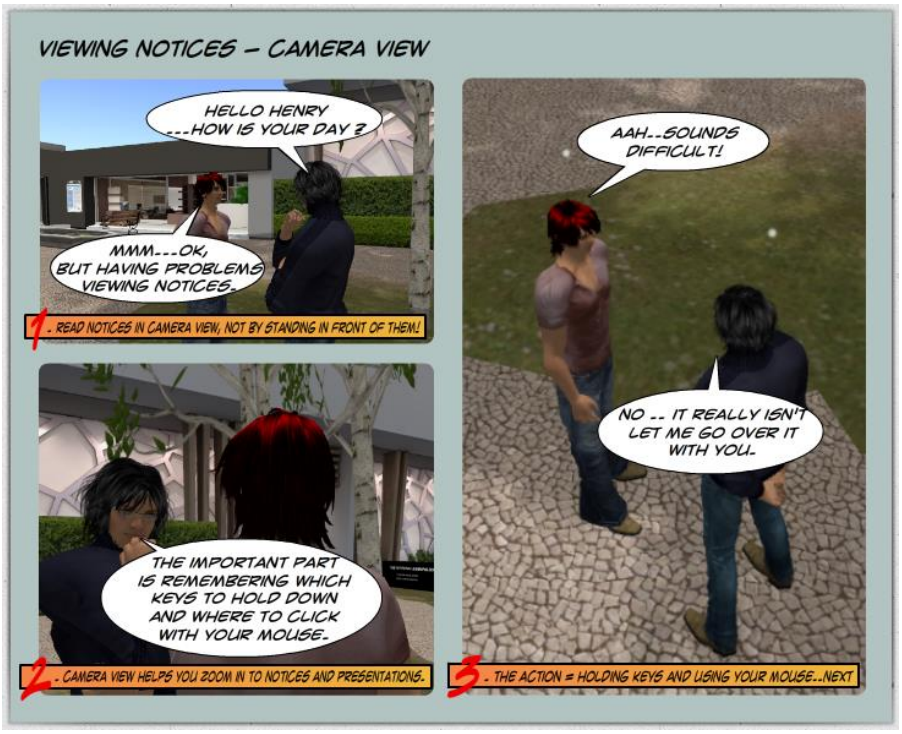


Fig: [12] Typical poster in the learning zone
The poster is the first panel, in a series of panels, to explain how to better view documents and posters.

4.4 Experimental Environments

Acknowledging that future 3D VLEs would need to have much more functionality, be less constrained and offer greater independence from a third party provider constraints, as mention in the previous sections of this report, experiments were conducted in developing what was termed by the EVIVA team a 'High Fidelity' room (Fig. [13]), representative of a typical interpreter scenario. UNITY 3D game engine, with its associated design and development tools were used to construct the room and provide an animated avatar. The avatars were constructed using Autodesk's Pinocchio project (now Autodesk Character Generator) and were animated using popular industry tools such as Autodesk's Maya and 3DS Max.

Fig: [13] The High-Fidelity Experiment Room design in UNITY

Despite the infinitely higher flexibility of constructing environments and the absolute control of in-world variables, a solution such as this requires extensive development in terms of the underlying platform that provides the service. Moreover, features like user management, authentication, zoning and instancing are beyond the capabilities offered by Unity 3D. Such an implementation would require a number for 3D-party components and would very much resemble the process of developing a commercial computer game.

4.5 Immersive Environments

A great deal of publicity was seen during the project period to advances in 3D immersive environments, particularly due to the popularity of a new, low-cost head-mounted display (HMD) called Oculus called 'Oculus Rift'. The photo below shows one member of the team using the Oculus rift head set in the EVIVA Practice Mode Building in preliminary explorative studies. These studies explored the potential use of such devices in role-plays.

Fig: [14] Using Oculus RIFT to navigate immersively in the EVIVA Live Mode 3D VLE.

A P P E N D I X 1

H A N D B O O K

HANDBOOK – TUTORIAL DOCUMENTS

The following sections provide a selection of instructional material provided to users to support the Learning Zone tutorials in a Handbook for both basic and advanced users.

1. USING THE 3D ENVIRONMENT

Whether you are a student, evaluator or casual visitor to the IVY virtual learning environment, having the right equipment and familiarising yourself with the 3D environment navigation and controls is essential. The IVY 3D environment is essentially about the development of your interpreting skills. However, rather like driving a car for the first time – you wouldn't set off shopping or visiting friends until you have a properly equipped car, you are familiar with the controls and have had sufficient practice. In the same way we want to make sure you have the right equipment, can navigate the 3D environment and have had sufficient induction and then practice, to allow you to use the learning material fluidly – that is to say, without interruption from the hardware and everything else under the 3D bonnet.

Once you arrive at the EVIVA Centre, which has been set up to give students and evaluators access to the IVY environment, you will be signposted to relevant learning resources, including the EVIVA LEARNING ZONE. However, for present purposes the table below provides a checklist of essential equipment and movement controls to refer to during your induction experience.

2. QUICK-START CHECKLIST

HARDWARE	(accessories)		
HEADSET WITH MICROPHONE	To communicate by voice	A headset with attached boom microphone is essential	This equipment ensures that noise pollution – cross-talk, doesn't occur to disrupt meetings
MOUSE	To navigate, view and interact with objects To use camera controls to read distant notices	The mouse is standard issue for most PCs, with left, right buttons and centre scroll button	Trying to use the built in mouse-pad on a laptop will not provide sufficient control.
CONTROLS			
Category	**Purpose**	**Action**	**Additional action**
PREFERENCES	**Please go through the PREFERENCE settings with your tutor**	Check: Graphics	Hardware dependant

	This will avoid lag (slow responses), loss of voice controls etc Camera set up	Voice Media Draw Distance Labels etc Camera constraints	TIP: Check that your voice settings work in a 'SKYPE' call test – if everything works well return in-world to the virtual EVIVA Centre *Click Crtl+D to show 'Advanced ' menu in top banner and select 'disable camera constraints' from this menu.
CAMERA CONTROLs	Zoom in or out	Hold Ctrl + Alt keys (the arrow cursor will change to a rectangle) Scroll Mouse	Move the cursor on to the object you wish to zoom in on and left click to select it. Scrolling back and forward will zoom in and out of your targeted object.
	Rotate camera around AN object (needed for viewing other avatars, documents, wall posters, signs etc)	Together Hold Ctrl + Alt keys and also the left mouse key	Moving the mouse left / right /forward /backward will rotate your view around the object Once correctly positioned in front of object release left mouse button and scroll to zoom in or out.
LANDMARK LOCATION	Landmark present location to return on a later occasion.	Select 'WORLD' from top menu banner.	Select LANDMARK THIS PLACE Your present location will be stored in your 'Inventory' under 'Landmarks'. Make a note of the name or you can right click and 'Rename' it.

The above table was created to provide helpful hints and tips to getting started using the EVIVA Centre virtual learning zone resources – the rest will be up to you and how much you practice. Jumping straight-in is always an option but our experience has shown that the inevitable stops, starts, checks and operating frustrations are so disruptive that it will adversely colour your view of the learning practice and undoubtedly minimise the benefits. Above all, enjoy the induction phase and then benefit from the additional support the EVIVA interpreter learning resources provide.

3. USING VOICE CHAT – ADVANCED USERS

The following instructions were provided for users to quickly get to grips with the basics of using voice-chat in Second Life.

Voice Settings and Voice Operation in Second Life
To use live interaction you need to have voice enabled settings working and checked.
You need to know a little about how voice chat works and how to adjust the settings.

Two Types of Voice Chat :

1) *Nearby voice chat* among people in close proximity inworld – that everyone else can hear nearby.
2) *Individual voice chat* (also called a voice call, private or IM chat), a private conversation between two people – that no one else can hear, even nearby.

1) Nearby voice chat is when you are want to talk to someone you can see nearby inworld. It is sometimes referred to as *spatial voice chat.* To chat with someone nearby, click on the **Speak** button in the bottom centre area of the Viewer window.

When voice is available a **white dot** appears above the avatar head – no dot, means voice isn't available for that particular avatar. Note – this also applies to your own avatar and should be checked in case your settings need adjustment.
When others nearby speak, you see their intensity indicators appear(The **wave formation** above their avatar head fig.1) and hear their voices as they will hear yours. This doesn't apply during *individual chat*.
You may need to adjust the volume (see the end of this section for more about volume adjustment).
Note: In *nearby* chat, as you walk around someone who is speaking, you'll hear their voice move in 3D and also fade and strengthen in volume - depending how close you get. For example, if you turn toward someone and move closer, his or her voice grows louder.

2) Individual Voice Chat is used to talk to another person directly, no matter where you are inworld. This is sometimes referred to as a private call, private voice chat or IM chat.
This form of chat is a much more private form of chat, and is often used when someone is very near, you want to talk to them but not disturb others nearby or engage in a private dicussion.

To start an **individual voice chat** session:

1. Click 

at the bottom of the Second Life window. The **PEOPLE** window opens.
2. In the **MY FRIENDS** menu, place your mouse cursor over the avatar name of the person you wish to talk.
3. Double-click on their name.
4. In the window that opens, click **Call**
5. A pop-up advises you that you'll be leaving nearby voice chat (note: no further *nearby spatial* chat will be possible until you finish your individual chat); meanwhile the person you're calling will see a pop-up asking if they want to accept your call. If they do so, your private conversation will start. If not, then you'll be returned to *nearby* voice chat.

Note: If you're using IM (Instant Messaging) to text with someone, you can also try clicking **Call** to initiate an *individual voice chat* session.

Volume Adjustments

To adjust the volume of people in nearby chat:

1. Move the mouse cursor over their avatar
2. Click their *information* icon  .
3. Adjust the slider at the bottom of the window or click on the speaker icon to turn off someone's speaking volume altogether.

Trouble Shooting:

If voice doesn't work there are a few simple things to check first:

Check that voice has been enabled in your prefernces:
By default, voice is enabled in the Second Life preferences but for some reason it may have been turned off.

1. Top Left Menu bar - Choose **Me** then **Preferences**.
2. Click the **Sound & Media** tab.
3. Select **Enabled** in the box next to **Voice Chat**.

if this is unchecked Voice will be disabled, and all of the voice settings will be grayed out. This means **you won't be able to hear anyone** talking nor be heard yourself.
Make sure Voice Chat is selected.

Useful Tip:

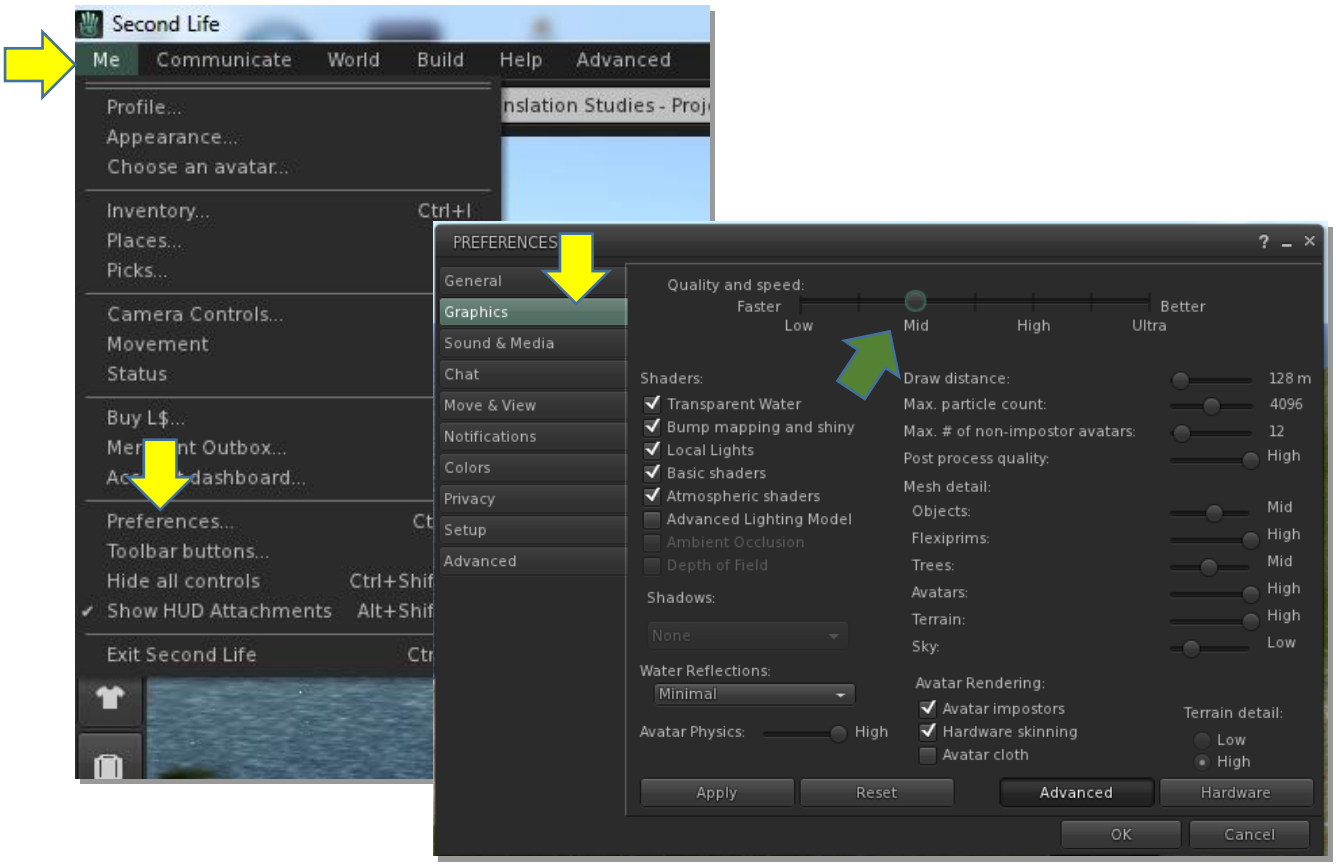
To fix difficult voice settings in Second Life, go into SKYPE and check your settings again using the **'Skype Call Testing'** facility and using the SKYPE options menu and audio settings tabs. Then return to Second Life.

EQUIPMENT AND HARDWARE STANDARDS

Perhaps the two most important items of equipment that users often ignore are the mouse and headsets. It can't be overstated how important these simple items are to ensure the effective use of the 3D VLE.

Mouse (not mouse pad)	Laptop users can use 3D VLE without a mouse – however, this is a major problem and can contribute up to 90% loss of functionality in movement, scenario viewing and document reading ability.
Headphones with boom microphone	Laptop users can (and often do) use their inbuilt audio microphone and speaker systems in-world but this generates major **feedback noise** and **distortion** to other users during voice interaction, both in direct and more especially in spatial (group) voice conversations.

Users may experience **bandwidth** or **hardware problems** that prohibit or diminish access to the 3D learning platform (Second Life). Low bandwidth or fluctuating bandwidth will prohibit access to the 3D virtual world provider. Low bandwidth can often be compensated by reducing the graphics settings in the user 'Preferences' menu in the 'client viewer'– particularly if the graphics are set too high.



Panel 1: Changing the Graphics settings to compensate for low bandwidth

In some cases problems will occur when the hardware – laptop or PC, have insufficient or non-compatible components (mostly graphics cards) that cannot deal with the graphical environment. Second Life does not presently run on an iPad or iPhone. The list below provides a guide to recommended hardware at the time of writing and warns of non-compatible components.

HANDBOOK - HARDWARE REQUIREMENTS FOR EFFICIENT SECOND LIFE INTERACTION

Computer hardware must meet these minimum requirements, or users may not be able to successfully participate in Second Life, IVY VLE.

Windows	Minimum Requirements	Recommended
Internet Connection*:	Cable or DSL	Cable or DSL
Operating System:	XP, Vista, or Windows 7	XP, Vista, or Windows 7
Computer Processor:	CPU with SSE2 support, including Intel Pentium 4, Pentium M, Core or Atom, AMD Athlon 64 or later.	1.5 GHz (XP), 2-GHz (Vista) 32-bit (x86) or better
Computer Memory:	512 MB or more	3 GB or more
Screen Resolution:	1024x768 pixels	1024x768 pixels or higher
Graphics Card for XP:**	• NVIDIA GeForce 6600 or better • **OR** ATI Radeon 8500, 9250 or better • **OR** Intel 945 chipset	**NVIDIA Graphics cards** 9000 Series: • 9600, 9800 200 Series: • 275 GTX, 295 GTX **ATI Graphics Cards**

Windows	Minimum Requirements	Recommended
Graphics Card for Vista or Windows 7 (requires latest drivers):**	• NVIDIA GeForce 6600 or better • **OR** ATI Radeon 9500 or better • **OR** Intel 945 chipset	4000 Series: • 4850, 4870, 4890 5000 Series: • 5850, 5870, 5970 **NVIDIA Graphics cards** 9000 Series: • 9600, 9800 200 Series: • 275 GTX, 295 GTX **ATI Graphics Cards** 4000 Series: • 4850, 4870, 4890 5000 Series: • 5850, 5870, 5970

Mac OS X	Minimum Requirements	Recommended
Internet Connection*:	Cable or DSL	Cable or DSL
Operating System:	Mac OS X 10.6 or better	Mac OS X 10.6 or better
Computer Processor:	1.5 GHz Intel based Mac	2 GHz Intel Core 2 Duo or above
Computer Memory:	512 MB or more	3 GB or more
Screen Resolution:	1024x768 pixels	1024x768 pixels or higher
Graphics Card:**	• ATI Radeon 9200 and above • **OR** NVIDIA GeForce 2, GeForce 4	• ATI: 4850, 4870 • **OR** NVIDIA: 9800

Linux	Minimum Requirements	Recommended
Internet Connection*:	Cable or DSL	Cable or DSL
Operating System:	A reasonably modern 32-bit Linux environment is required. If you are running a 64-bit Linux distribution then you will need its 32-bit compatibility environment installed.	A reasonably modern 32-bit Linux environment is required. If you are running a 64-bit Linux distribution then you will need its 32-bit compatibility environment installed.
Computer Processor:	800 MHz Pentium III or Athlon, or better	1.5 GHz or better
Computer Memory:	512MB or more	1 GB or more
Screen Resolution:	1024x768 pixels	1024x768 pixels or higher
Graphics Card:	• NVIDIA GeForce 6600, or better • **OR** ATI Radeon 8500, 9250, or better	• ATI: 4850, 4870 • **OR** NVIDIA: 9600, 9800

Important Notes

***** Second Life is not compatible with dial-up internet, satellite internet, and some wireless internet services.

****** Second Life may not run on graphics cards other than the ones listed above.

The following cards are NOT compatible with Second Life:

- NVIDIA cards that report as a RIVA TNT or TNT2
- ATI cards that report as RAGE, RAGE PRO, or RADEON 320M, 340M, 345M, or similar model numbers
- Intel chipsets less than a 945 including Intel Extreme
- Cards with the following branding: 3DFX, RIVA, TNT, SiS, S3, S3TC, Savage, Twister, Rage, Kyro, MILENNIA, MATROX

The following cards have not been tested with Second Life, and compatibility is not certain:

- NVIDIA cards that report as Quadro
- ATI cards that report as RADEON IGP or RADEON XPRESS
- ATI cards that report as FireGL
- ATI cards that report as FireMV

*The above and updated details can be found at
http://secondlife.com/support/system-requirements/