



Agricultural & Life Skills Project

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**Module: Soil and water conservation
Pegging out contour lines
using an A-frame**

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Localisation documentation

September 2008

VR in Africa – for Africa – by Africa



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Contents

1	BACKGROUND.....	1
1.1	RURAL SKILLS – MAIN OUTCOMES	1
1.2	APPLICABLE LIFE SKILLS (GENERAL)	2
1.3	TARGET AUDIENCE & APPLICATION	2
1.4	CONTEXT	2
1.5	NAVIGATION MENU	3
1.6	BUILDING AN A-FRAME.....	3
1.7	PRACTICING PEGGING OUT	4
1.8	FINAL THOUGHTS	4
2	TEXT TO TRANSLATE	5
3	AUDIO TO TRANSLATE.....	8
3.1	NARRATION	8
3.2	COMPRESSION DATA.....	8
3.3	AUDIO FILE CONTENT	8
	ANNEXURE 1: HOW TO LOCALISE I3DLO’S – A SUMMARY	11
	THE BASICS:.....	11
	REPLACING TEXT TEXTURES:	11
	REPLACING AUDIO FILES:.....	13
	ANNEXURE 2: LINKING I3DLO’S TO POWERPOINT.....	14
	ANNEXURE 3: GENERAL INFORMATION	15
	SIMULATION VIEWER - INSTALLATION	15
	COMPUTER SPECIFICATIONS	15
	MOUSE USAGE	15
	TROUBLESHOOTING.....	16

Pegging out using the A-frame i3dlo - LOCALISATION DOCUMENTATION

- ❖ For a background and history to this i3dlo, refer to Section 1 below
- ❖ If you want to get to the **technical localisation detail** of the **i3dlo** - go to **Sections 2 (text translation) and 3 (audio translation)**.
- ❖ If you want to **brush up on how to localise** an Interactive3d learning object - go to Annexure 1
- ❖ To see how to embed an i3dlo into your **PowerPoint** presentation, refer to Annexure 2
- ❖ For general information on computer requirements. usaae etc. refer to Annexure 3

1 Background

Funding agency W K Kellogg Foundation (**Grant No. P3002256**)

Project partners This project has two main partners, **World Links** who focus on the testing of localisation procedures, translating the material into commonly used Zimbabwean languages as well as downstream implementation through their community centre network; and **the Naledi3d Factory**, responsible for the visual content development

This i3dlo forms part of a rural development and farming skills development project that addresses the following:

- Help rural communities better understand and, therefore, be better empowered to address local issues that impact on rural development – and in this case, focusing on agricultural and other life-skills development and in a way that **modernises** local practice, without necessarily **westernising** these practices
- Demonstrate the use of VR-based learning content and especially the use of Interactive3d Learning Objects (i3dlo's) as a new, innovative visually interactive communication / learning medium in the African context
- Implement agricultural capacity building, to be achieved through focused community-based training workshops
- Transfer of skills to further “localise” Interactive3d Learning Objects

Note: an associated interactive3d learning object is also available that addresses the identification of contour lines using the line-level.

1.1 Rural skills - main outcomes

- Why a field should be pegged
- Things to think about before starting to peg
- Making an A-frame
- Pegging out using the A-Frame

This i3dlo is aimed therefore at helping farmers to understand the importance of ploughing along contours, as well as how to develop a clear understanding of lines of level contour by surveying the field using an A-frame (and by pegging (marking) out the field accordingly).

Note, there are other ways of surveying fields. A similar approach, using a line-level is explained in a separate i3dlo in this series.

1.2 Applicable life skills (general)

A principal project goal is to develop competence-based learning material that will help to empower rural people and to stimulate their minds in a way so that they can fill in the detail using their own local knowledge.

Thus, the learning material should (1) Inspire; (2) Stretch; (3) Develop self-confidence; in such a way that we can (4) **Modernise, without necessarily Westernising.**

1.3 Target audience & application

The i3dlo simulations developed as part of this project are directed at functionally (semi) illiterate people in rural communities who are (or plan to) working in small-holding farming activities.

The i3dlo's are suited for use as *part* of skills development workshops where they are embedded and used with other training material – where they can for example be embedded into PowerPoint presentations (see Annexure 2).

They will typically be used by farm extensions services, local community centre training staff, or as in the case of this project, directly by organisations such as World Links Zimbabwe, who are “training the trainers” as well as farmers in local, rural communities

1.4 Context

Soil and water conservation: Good soil and water is very important to farming successfully. Southern Africa is, however, technically classified as a semi-arid desert region – and is moving more and more towards a permanent drought situation. Capturing water in situ, either through soaking, or through water collection can play a major role. To compound the situation, bad agricultural practices, over many years, have led to dangerous levels of soil removal. It is estimated that between 13 and 25 tonnes of soil per Ha is being lost every year. Over time, this has obvious implications for food production and even human sustainability in the region. Soil has become the region's largest export, and soil conservation is a major priority for the SA Government. Minimising soil removal and retaining rain-water at the farm or district level is therefore crucially important.

Pegging out: This i3dlo shows one simple way to peg out a field using the A-frame - and to accurately define the contours across the field.

Knowing how the contours run across your field is important when ploughing in order to minimise, or control water run-off. Ploughing along the contour (as opposed to down the slope) helps to ensure that as much water as possible remains in the field and soaks into the

soil. If water runs down the slope, it will wash away topsoil and nutrients, to the detriment of the field environment as well as the farmers' ability to generate income.

Some other relevant information resources also include:

1. *A Guide for Farmers on Good Land Husbandry - Soil and Water Management – Harare University / Agritex*
2. *A Guide for Farmers on Good Land Husbandry - Alternative Soil and Water Conservation - Harare University / Agritex*
3. Technical Brief – the A Frame. Practical Action Technology Challenging Poverty – (undated)
4. Home Garden Technology Leaflet 7 – Erosion Control and Soil Conservation. FAO Corporate Document Repository. (Undated).
www.fao.org/docrep/003/x3996e31.htm
5. Simple surveying techniques, use of the line level for surveying. Water harvesting, Annexure 1). FAO Corporate Document Repository. (Undated).
www.fao.org/docrep/U3160E/u3160e/0a.htm

1.5 Navigation menu

After an introductory screen that places the i3dlo in context, a navigation menu is given:

Build an A-frame	See below
Practice pegging	See below
Toggle nature sounds	Turns the background sounds on /off
Exit simulation	Exit the simulation and return to Windows
Exit menu	Closes the menu items

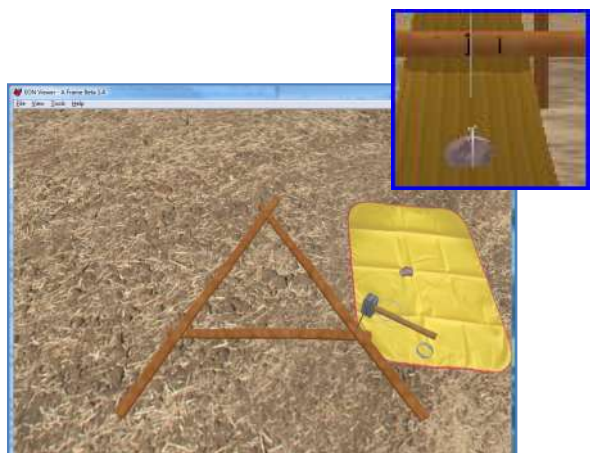
Building (making) an A-frame and practicing pegging out are discussed below.



1.6 Building an A-frame

This section of the i3dlo shows how to make an A-frame, which consists of three long poles fastened together and a (calibrated) hanging weight to indicate when the A-frame is on level ground.

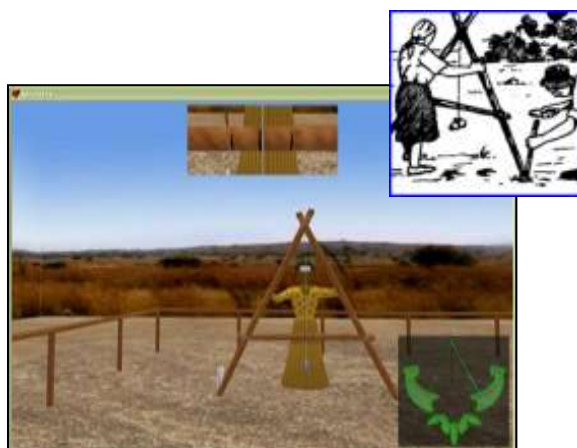
Once the frame itself has been constructed, the simulation also explains how to mark the cross pole to indicate when the hanging weight is truly vertical (the point at which the frame is level).



1.7 Practicing pegging out

This section of the i3dlo shows how to use the A-frame to find two points of level contour in the field. When the two legs are on level points, the vertical string will hang vertically. The new point is then PEGGED. The A-frame is rotated 180° and the process repeated across the field.

The end result is a line of pegs indicating a line of equal contour across the field. The process is then repeated 10 to 30 metres down-slope (depending on the field slope) to produce pegged lines indicating lines of equal height.



1.8 Final Thoughts

By surveying the field using the A-frame (or line level), the farmer can be sure that they are ploughing along the contour line, knowing that as much water as possible will be retained in the field during future rainy seasons

It may also be practical to make the pegged lines more permanent by building ridges so that the work done in the pegging out process is not lost).

Finally, if ploughing is not done along the contours, there is every chance that the field will lose top-soil due to water-based erosion, especially in the rainy season.

This could take the form of sheet erosion if water is allowed to run across the field; or if rainwater becomes channelled, then rills will form. If these aren't taken care of in time, then the rills could grow into gullies, which are very difficult to control and almost impossible to repair.



2 Text to translate

In this section, we look at the text that has been included in the i3dlo, either on buttons, used in pop-up boxes etc.

There are two places where text is normally contained within an i3dlo.

1. Firstly, text appears in image files, i.e. either in .png or .jpeg files. These files are contained in the first table below. For each piece of included English text, a Photoshop PSD filename is provided (as a template) and the actual filename as well as the font used is given.
2. The second place where we place text is inside JScript files. **However JScript is not used in this i3dlo.**



For each text element described, a second language cell has also been included to help you to work on the new language text. *We suggest you copy this table into a separate file to work on.*

English Text	New Text	Filename	PSD Filename	Font
Soil and water conservation - Pegging out contour lines using an A-frame		A_frameS.jpg	splash_Screen_NR.psd	Arial , Bold, 12.7mm, RGB Colour Code: 0,0,0
<i>Note: This is a screen that contains credits and licensing information. Because most of this information consists of names of individuals and their contact details you may not wish to translate the text. Should you prefer, however, to localise this information please see the Credits & License.psd file for details</i>		Credits & License.jpg	Credits & License.psd	Arial, Colour Code: 0,0,0
Auto-complete pegging		bAutoPeg.png	ButtonText.psd	Arial, Bold, 1.76mm, RGB Colour Code: 255,255,255
Toggle Nature Sounds		bBirds.png	ButtonText.psd	As above

Build A-Frame		bBuildA.png	ButtonText.psd	Arial, Bold, 1.76mm, RGB Colour Code: 255,255,255
Exit Simulation		bExitSim.png	ButtonText.psd	As above
Exit Menu		bExMenu.png	ButtonText.psd	As above
Show Final Result		bFinalResult.png	ButtonText.psd	As above
Hello		bHello.png	ButtonText.psd	As above
Practice Pegging		bPeg.png	ButtonText.psd	As above
Top View		bTop.png	ButtonText.psd	As above
Walk Mode		bWalk.png	ButtonText.psd	Arial, Bold, 1.76mm, RGB Colour Code: 255,255,255
View Level Plane		bViewLvl.png	ButtonText.psd	As above
Important Considerations		hConsiderations.png	Popup Heading Master.psd	Arial, Bold, 1.76mm, RGB Colour Code: 0,0,0
Please Remember:		hReminder.png	Popup Heading Master.psd	1.76mm, RGB Colour Code: 0,0,0
Building the A-Frame		hStartBuild.png	Popup Heading Master.psd	1.76mm, RGB Colour Code: 0,0,0
Welcome to the Pegging Simulation		hWelcome.jpg	Popup Heading Master.psd	1.76mm, RGB Colour Code: 0,0,0
Pegging should start on the crest or ridge and run along the contour towards the waterway, with each contour line being about 20 or 30 metres apart..		pConsiderations.png	Popup Text Master.psd	Arial, Bold, 1.76mm, RGB Colour Code: 255,255,255

Remember, the steeper the slope, the closer the contours.				
Pegging out is important for good land management.				
<p>You can now plant crops along the contour line. When it rains, the water cannot run downhill and the water seep into the soil</p> <p>Remember:</p> <ul style="list-style-type: none"> • Regularly check the accuracy of your A-frame • The poles need to be tied together firmly so that the A-frame is rigid • Do not use the A-Frame in a strong wind as the string will be disturbed and you will not be able to do accurate work! • Make sure the A-frame legs aren't standing in a furrow, in a ridge or on an ant-hill! 		pReminder.png	Popup Text Master.psd	Arial, Bold, 1.76mm, RGB Colour Code: 255,255,255
<p>You are now ready to build you're A-Frame.</p> <p>Click on the items indicated by the green arrow to activate the building process.</p>		pStartBuild.png	Popup Text Master.psd	Arial, Bold, 1.76mm, RGB Colour Code: 255,255,255
<p>Welcome to the A-Frame Pegging Simulation!We need to make sure that as much soil stays in our fields as we can. Pegging out our fields shows us where our contours are.</p> <p>This means that we can plough along the pegged level contour lines to make sure that rain-water and our soil stays in the fields.</p> <p>Click here to continue...</p>		PAWelcome1.png	Popup Text Master.psd	Arial, Bold, 1.76mm, RGB Colour Code: 255,255,255

3 Audio to translate

3.1 Narration

The narrations act as an aid to the learning process and to reinforce specific messages.

3.2 Compression data

File type : Wave (Microsoft)
Audio Format : MPEG Layer-3
Audio Attributes : 24,000 Hz, 56kBit, Stereo

3.3 Audio file content



Filename	Text
<i>a-intro_1.wav</i>	We need to make sure that as much soil stays in our fields as we can. Pegging out our fields shows us where our contours are. This means that we can plough along the pegged level contour lines to make sure that rain-water and our soil stays in the field.
<i>a-consider_1.wav</i>	Before you start to peg out, it is important to walk around the field to identify the high points (the crests and ridges) and low points - which form natural drainage and water-ways.
<i>a-consider_2.wav</i>	Pegging should start on the crest or ridge and run along the contour towards the waterway, with each contour line being about 20 or 30 metres apart. Remember, the steeper the slope, the closer the contours. Pegging out is important for good land management.
<i>a-consider_7.wav</i>	Can you think of other reasons why it is important to know where you contours lie?
<i>a-consider_8.wav</i>	Think about organizing a group discussion or chat to your local extension officer.
<i>a-Build 1.wav</i>	Pegging out a field using an A-frame is easy, but can only be used for pegging level contour lines. The first step is to make the A frame – let's have a look at how to do this.
<i>a-Build 1.1.wav</i>	First of all, you will need two people - and a few items: Two straight poles, about three metres along and if possible, at least 8cm thick.

<i>a-Build 1.2.wav</i>	Another straight pole, about 2 metres long and if possible, at least 8cm thick .
<i>a-Build 1.3.wav</i>	3 x 20cm nails preferably, or wire to fasten the poles together.
<i>a-Build 1.4.wav</i>	About 2.5 metres of strong string and a knife.
<i>a-Build 1.5.wav</i>	An oblong stone or half-brick, about the size of your fist.
<i>a-Build 1.6.wav</i>	A hammer and wooden pegs to mark your contour lines.
<i>a-Build 2.wav</i>	Click on the two longer poles to nail them together at one end.
<i>a-Build 3.wav</i>	Click on the 2m cross pole and nail this pole across the two legs, measuring 1m from the base of each leg. Make sure to leave about 10cm sticking out at each end.
<i>a-Build 4.wav</i>	Put 2-3 rounds of wire over the nailed joints to strengthen the frame. Nails and wire are the best, but you could also use string to tie the poles together. Remember that it is important that the A-frame is RIGID when you have finished building it,
<i>a-Build 5.wav</i>	Finally, click on the stone to hang it from the top of the A frame making sure that the stone hangs about 15cm below the cross pole.
<i>a-Mark 1.wav</i>	Hold the frame in an upright position, making sure that the string is very close to, but not touching the cross-bar. When the string and weight has stopped swinging, make a light mark on the cross piece where the string is hanging.
<i>a-Mark 2.wav</i>	Mark the floor where the two legs touch the ground.
<i>a-Mark 3.wav</i>	Turn the frame around so that the opposite legs stand on the marks that you have just made.
<i>a-Mark 4[1].wav</i>	<p>Make a second light mark where the rope passes the cross piece.</p> <p>If you are doing this on level ground, the two marks should be very close to each other. If you are doing this on uneven ground, the first two marks will be further apart. This is OK.</p> <p>Finally, find the middle of the two light marks and make a clear and permanent mark at this point.</p>
<i>a-Mark 5[1].wav</i>	To find the middle, you can either measure this with a ruler or use a piece of string. If you use string, take a piece long enough so that it fits exactly between the first two marks. Now fold the string in half, keeping one end on one mark. The length of the folded

	string will now show you the centre spot between the two marks.
<i>a-Mark 6.wav</i>	Now your new A-frame is ready to be used to peg out your field.
<i>a-use 1.wav</i>	Go to the edge of the field and mark it with a peg. Place one leg of the A-frame next to this peg. Keeping the A-Frame upright, move the other leg of you're A-frame up or down the slope until the string is exactly in front of the centre mark on the cross pole. Again, make sure that the string is not touching the cross-bar. Remember, it is important to keep the frame upright without the string touching the cross bar. Put a second peg into the ground
<i>a-use 2.wav</i>	Now, keeping the second leg at the new peg, swing the A-Frame around. Once again move the one leg up or down the slope until you find the string is in front of the centre mark. Put a peg into the ground.
<i>a-use 3.wav</i>	Continue like this to the field boundary. When you reach the field boundary, go back to the starting point , measure the correct distance down the slope for the next contour, and start pegging again. Don't forget, the steeper the slope, the closer your pegged lines should be
<i>a-use 4.wav</i>	<p>You can now plant crops along the contour line. When it rains, the water cannot run downhill and the water seep into the soil</p> <p>Remember:</p> <ul style="list-style-type: none"> • Regularly check the accuracy of your A-frame • The poles need to be tied together firmly so that the A-frame is rigid • Do not use the A-Frame in a strong wind as the string will be disturbed and you will not be able to do accurate work! • Make sure the A-frame legs are not standing in a hole, in a ridge on a rock, or on an ant-hill!
<i>a-use 5.wav</i>	Now that you understand how to peg out a field, can you think of ways that the pegged out lines are used? In this example, the lines are being used to guide where you plough. When we plough or plant crops along a level pegged line, when it rains, the rain water cannot flow downhill and will soak into your soil – which is just what you want.

Annexure 1: How to localise i3dLO's - a summary

Arguably, the most powerful feature of *Interactive3d Learning Objects* is their translatability into many other languages. This feature means that the knowledge encapsulated within each I3dLO can cross language barriers and be shared with a global community at the click of a button. Audio and text components can easily be translated into other languages by exploiting the so-called “ZIP” compression functionality built into .EOZ files. This is how it's done.



The Basics:

All the information needed to run an i3dLO such as text files, audio files, etc, can be found inside the compressed .EOZ file. In principal, you need to replace the graphic and audio files in the EOZ in order to change the text and audio components of the I3dLO to a new language.

This is actually very easy to do if you follow these steps:

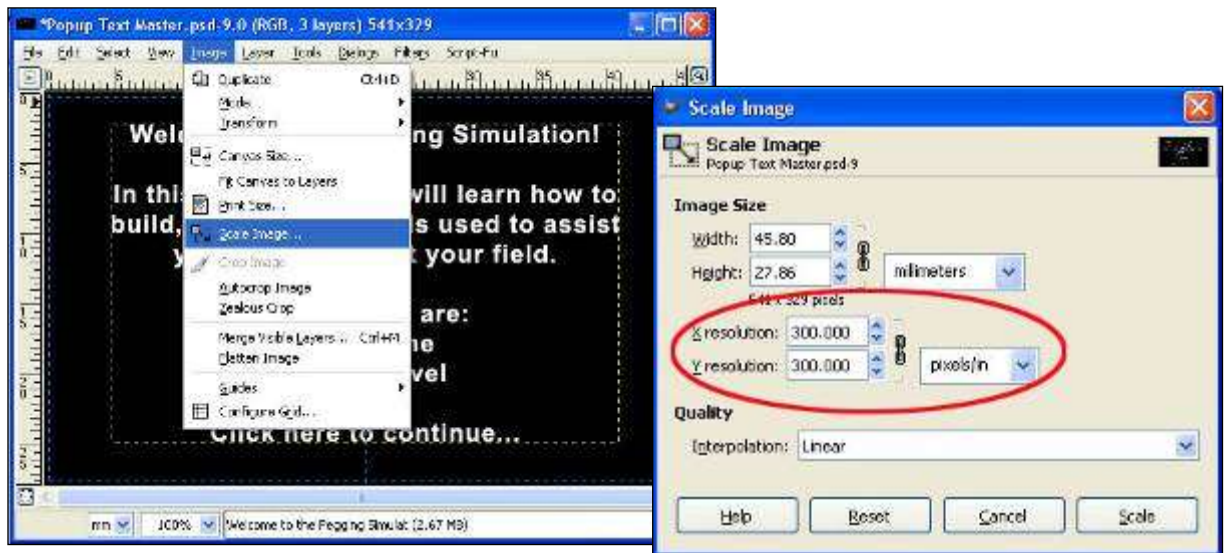
1. You've probably worked with compressed .ZIP files before. Well, an EOZ file is basically the same – you just need to unzip it! We recommend that you use WinRAR to do this as it is NOT case sensitive, unlike WinZIP which IS Case-sensitive (trust us on this one, you'll thank us later!). WinRAR is a shareware program that can be downloaded at <http://www.win-rar.com> so go get it if you haven't already.
2. Right, now you have got WinRAR at the ready, you're raring to go. Not so fast. First you need to do something very important. Save a backup copy to work on (we never work on original files!). Now open the file with WinRAR by right-clicking on the file, choose “Open With” and select WinRAR. You may have to click on “Choose Program ...” and then select WinRAR from the list or browse to its location to get it to open your file if it's not already associated with .EOZ files. Hey presto, the inner secrets of your I3dLO are revealed!

Replacing Text Textures:

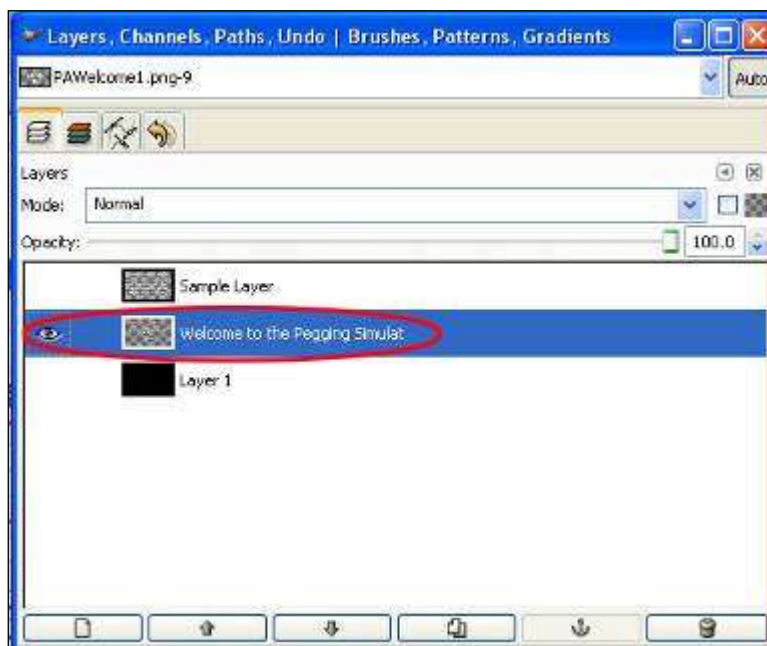
OK. Now that you've opened the .ZIP file with WinRAR you're probably thinking, wow, there's a lot of stuff in here. You'll probably see about half a dozen types of files. Don't panic. We're only interested in a couple. We'll take it step by step - starting with text replacement.

1. You'll see that there are a number of .PNG files inside the file. These contain the actual text that is used in the i3dLO. These are the files that you need to replace with your new, translated versions. But please don't edit the .PNG files directly. You can download a set of Adobe Photoshop™ .PSD files from the website (see the Photoshop resource folder) that can be used as templates to generate your own, translated content. They are precisely sized to ensure that the text fits the way it should. These Photoshop “templates” are listed next to the relevant .PNG files in tables below together with the fonts, font sizes and font colours you'll be using.
2. Go ahead and open the .PSD file and type your own translated text in. If you have Photoshop then the process of editing the text layer contained within a .PSD file is a simple process. You can purchase a simpler and cheaper download version called “Photoshop Elements” from Adobe.com for approximately USD 100.
3. What? Do I hear screams and a gnashing of teeth: “How do I open .PSD files if I don't have Adobe Photoshop™?” Relax, take a deep breath and then download a secret weapon from the Web called “GIMP” from <http://www.gimp.org/>. With GIMP you can do photo retouching, image composition, image authoring, open .PSD files and, what's more, it is open source and therefore, free!

- OK, that was the good news. Now for some bad news. GIMP won't actually allow you to edit the .PSD file's text layer itself because it turns it into a raster image as opposed to editable vector-based text. This means that you can only use the text layer as a guide for the correct placement of your new text. The table below gives you all the font information that you need. However, before you start, you must make sure that GIMP is using the correct resolution otherwise you'll never get the font size right. The settings will obviously vary from project to project. For Pegging out with the A-Frame you must set GIMP's resolution to 300 pixels per inch. Click on "Image" then "Scale Image" to get to the right window. Make sure that the X and Y resolutions are set to 300! Check out the screen shots below.



- There is one important thing to keep in mind when you are editing the layers.** You only want your new text layer to be visible. Make sure, therefore, that only this layer is visible in your layers palette. Look for the "eye" icon next to the text layer. See the screenshot below.



6. When you're done, save the new file as a .PNG file. Now, this next bit is very important: You must save your new .PNG file using EXACTLY the same file name as the original file otherwise the .EOZ file won't recognise it and it simply won't load into the simulation – don't use the .PSD file name and don't say we didn't warn you!
7. When you're ready simply drag the new file from Windows Explorer into the open WinRAR window to replace the old file. That's that! Or is it? Nope, not quite but almost. Your .ZIP file will, to be frank, do just that. Zip, nada, nothing.

You have to rename the simulation file extension back to .EOZ again to be able to run your i3dLO in the EON Viewer. Now you're done.

Replacing Audio files:

1. Now you'll have noticed a several other files inside the .EOZ file that have a .WAV extension. At this point all the experts among you will, no doubt, stretch and yawn with a "been there, done that expression" on your faces. Just bear with me as we run through some more basics. All the I3dLO's that you download from the website contain WAV files recorded at 44kHz, in 16 bit and stereo, with MPEG layer 3 compression. This gives good quality audio with a low file size and is our audio standard for I3dLO's. For a more detailed discussion about audio files take a look at the August 2006 "*News and Views*" which contains a great article about recording audio clips.
2. By now you should be familiar with the procedure for "un-zipping" .EOZ files. If you're still not comfortable with this, have another look at the steps outlined above and try it out a few times. Practice makes perfect, after all.
3. Once you've finished recording your audio clip you have to save it back to the original file in WinRAR. We must stress again at this point how important this step is. Save your new .WAV file using EXACTLY the same file name as the original file otherwise the .EOZ file will not be able to pick it up when the simulation is run, *capiche?*

Annexure 2: Linking i3dlo's to PowerPoint

You can also use your simulations in PowerPoint presentations. It's easy to set up and all you have to do is the following:



1. Open PowerPoint, move to the slide where you want to inset the simulation
2. Click on *Insert / Object*.
3. Select *Create New* and *EonX 4.0.1* (note, the version number is likely to be higher) & click *OK*.

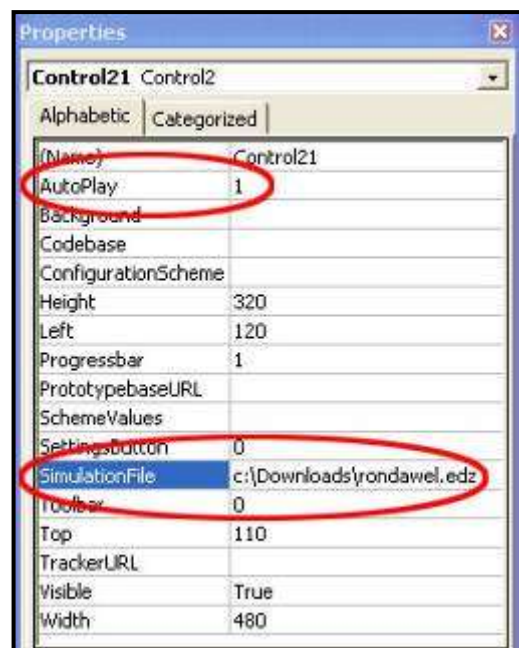


4. An empty selection dialogue box will now appear on your screen. Right-click on the selection. Click on *Properties* and complete the following fields:

Autoplay: 1

Simulation File: The **path** to your simulation file (NB: Check your file extensions – If you're using *EON Distribution Files* the file extension will be *.edz* & if you're using *EON Studio Documents* the extension will be *.eoz*).

5. When you now view your slide show, the EON simulation will automatically run when you move to the PowerPoint slide that you have linked to the simulation.



Annexure 3: General information

Simulation Viewer - installation

i3dlo's have been developed and are normally distributed as separate files (they will have either an .EOZ or .EDZ file extension). You will need to install the EON Viewer to run these simulations. If you haven't already installed the latest viewer, or don't have a latest copy, it can be found at www.naledi3d.com (select the "i3dlo home" button / downloads, the link is at the top of the page). The latest version (September 2008 is 6.0.0).

There is no installation process for i3dlo files. Once they have been copied to your hard drive, they can be run by simply double-clicking on the file name; or you could consider placing a short-cut on your Windows desktop, or for example, embed relevant i3dlo's into your PowerPoint presentations (see Annexure 2 for more on this).

Computer specifications

It is important to keep in mind that VR simulations require PC's with a "good" graphics card and sizeable memory. The terms "good" and "sizeable" can be defined along the lines of the following hardware configuration, which would be our PC of choice:

- Intel Pentium IV or AMD Athlon CPU (2GHz or better)
- 256 MB RAM (512 MB RAM preferred)
- At least 250 MB spare hard drive disk space for installation – some of the i3dlo's can be as big as 20Mb (or more) each
- Sound card and stereo speakers, CDROM
- Monitor capable of 1024 x 768 or better
- AGP or PCI-E Graphics card with at least 128Mb of dedicated memory onboard (256Mb preferred) (Nvidia GeForce cards are recommended.)
- 3-button mouse and Windows XP

i3dlo simulations have been known to run on smaller computers, such as notebooks with the Intel graphics chipset (for example, with 128Mb shared memory); and World Links in Harare have even run some smaller simulations on older Pentium III computers. However, it is the nature of "real-time" interactive graphics programmes that the better the graphics card / chipset combination, the more dedicated graphics memory and PC memory available, the better the simulation will run.

Typical symptoms of using a computer that is "low" on specifications is that the simulation take longer to load; are "jerky" when moving around; or some of the textures may not render properly.

Mouse usage

Depending on which i3dlo is being used, a computer mouse can be used in varying ways to control movement around the simulation. Firstly, as in most software applications, the user uses the mouse to move the cursor and mouse clicks to make selections from displayed menu items, or to click to move the i3dlo forward when dialog boxes are displayed.

However, because the i3dlo is based on Virtual Reality (VR) and interactive 3D worlds, the mouse can also be used (sometimes this option is intentionally "turned off") to move around the 3D world.

This is usually achieved by holding the left –button in and sliding the mouse slowly forward to move forward, or left / right to turn (depending on which direction you want to go). This navigation control is quite intuitive and normally only take a few seconds of practice to get used to the idea, and to also get used to co-ordinating the speed of the mouse movement with the actual speed of movement within the simulation.

Similarly, the right mouse button can often be used to move vertically (up or down) in the simulation; and a combination of the left button and the keyboard key to change the angle of view (again these options may have been intentionally turned off).

The middle mouse button may also be used change the angle of view.

Finally, there may be some cases where the left / right buttons may have been intentionally

swapped. A little trial and error will help you to determine what mouse controls result in which movements in a particular i3dlo.



Troubleshooting

In this section, we look at some common problems that may arise when working with interactive simulations.

1. Simulations don't run smoothly

By its nature, VR allows you to move around the 3D simulation in real time. While this is one of the more powerful features of Virtual Reality, it also means that the quality of the “screen re-rendering” is dependent on the amount of memory (both dedicated graphics and computer memory) and the system CPU that is available. If the simulation is not running smoothly it is likely that your computer is below specification (for that particular i3dlo). In marginal cases, you could try to reduce the load on the PC by closing as many other applications as possible.

2. Audio

On rare occasions, the sound option may become disabled. To check this click on *Tools* on the **EON Viewer Menu Bar** (right). Select *EON Configuration* from the drop-down menu and click on *Wave Sound*. The Wave Sound Properties menu will appear. Make sure that the *Sound Off* box is **unchecked!**

