

DigiGanz v1.0.0 Manual

Manual written by Jezz Fox August 2002

The DigiGanz system was developed as part of the project "Developing a digital autoganzfeld testing system" for which funding was awarded by the Bial Foundation (Portugal) to Matthew Smith, Jezz Fox, and Carl Williams (grant number 24/00)

All trademarks etc. are acknowledged.

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Overview

DigiGanz is a digital autoganzfeld system developed as part of the project "Developing a digital autoganzfeld testing system" for which funding was awarded by the Bial Foundation (Portugal) to Matthew Smith, Jez Fox, and Carl Williams (grant number 24/00). The aim of the system is to provide researchers with a system that takes care of many of the procedural aspects of running ganzfeld trials whilst remaining easy to use. This manual gives details of setting up and using the system. It is assumed that the reader is familiar with using computers. In addition it may be necessary to consult other sources (e.g. computer manuals) in order to complete parts of the installation. Once installed, the system should be relatively simple to operate.

The system uses two computers that communicate using TCP/IP protocols (Internet protocols). One of the computers is used by the experimenter who is situated with the receiver (this will be referred to as the receivers computer), the other is used by the sender (this will be referred to as the senders computer). These computers are connected using a form of network that allows TCP/IP communication (e.g. modem-to-modem, direct ethernet, Internet).

The DigiGanz software used to co-ordinate the trials was developed primarily for use using Apple computers running OS 8.5 to 9.2 (Apple Classic). There is also a version that runs on Mac OS X (Apple OS X version), and a third version that runs on Windows 95 or above (PC version). Consequently the different versions have slightly different features and have been tested to different degrees. In addition to the DigiGanz software, additional components may be needed. The system uses Apples QuickTime technology in order to present the media during the trial. Software for displaying this is freely available from Apple (<http://www.apple.com/quicktime/download/>). The Apple Classic version uses MicNotePad Lite in order to record the mentation of the receiver and sender. Thanks go to Nirvana Research for allowing the distribution of MicNotePad Lite software on the DigiGanz CD. In addition, if an audio link is required from the receiver to the sender, streaming software is required. Options for this include the commercially available Sorenson BroadCaster (www.sorenson.com) for the Apple Classic and Windows versions, CoolStream from Evological (www.evological.com) for Apple Classic (running OS 9), and the free QuickTime Broadcaster from Apple (www.apple.com) for Apple OS X users. A fully functional evaluation version of CoolStream is included on the CD. If used beyond the evaluation period the software should be registered. An academic discount is available by e-mailing info@evological.com before making your purchase. Thanks go to the people at Evological for allowing us to distribute

their software on the DigiGanz CD.

DigiGanz was developed using RealBasic versions 2.1.2 through to 4.0.2. The final versions were compiled using RealBasic Professional v4.0.2 under an academic license.

Disclaimer

The DigiGanz software is provided in good-faith to other researchers wishing to conduct ganzfeld trials. Whilst there are no known issues that would result in the loss of data, transmission of viruses, etc, and the software appears to record data faithfully, it is the responsibility of the user to test the system and be satisfied that it is functioning correctly before using it for the purposes of data-collection. By using the software, the user accepts responsibility for any problems that arise as a result of its use.

The purpose of the software

The software guides the experimenter and participants through a ganzfeld procedure in which the sender is in one room with one computer and the experimenter and receiver are in another room with the other computer. The computers are linked via a network that allows TCP/IP communications. Whilst it is possible to use the software over local area networks (LANs) or the Internet, testing the software is most easily achieved using two computers next to each other and connected by an ethernet cable. Note that depending on the type of computer you may need to use a crossover cable to achieve this. The demo settings provided with the DigiGanz software are for use with the receivers computer having the address 192.0.0.1 and the senders computer having the address 192.0.0.2.

The stages of the procedure are as follows:

1. Entering trial details (this involves choosing the design from a list of those available on your computer)
2. Entering participant details
3. Setting the volume to a comfortable level on for the sender and receiver
4. The session itself. This is comprised of two stages. Firstly there is a preparation phase in which the participants may be given instructions or guided through a relaxation procedure. The second phase is the trial period itself in which the receiver is exposed to ganzfeld stimulation and the sender is presented with the target for the session.
5. Viewing the options. Here the receiver is presented with the four items in the judging set (one of which the sender will have been viewing). There is also the option of showing the sender these four options at the same time.
6. The sixth stage is the judging phase in which the receiver awards ratings to each of the items in the judging set. There is an option for the ratings to be relayed to the sender as they are made.
7. Feedback. Here the receiver receives feedback as to whether they got a hit or not (i.e. selected the item that the sender had been presented with).
8. Review. Finally there is a review phase in which it is possible to see the four items in the judging set again. This allows participants and the experimenter to reflect upon the session. Naturally it is not possible to change any of the ratings at this point.

Before Installing DigiGanz

Before installing DigiGanz it is necessary to set-up the computers to be used. The DigiGanz software comes with several media files for use with the system. Therefore the computers should each have at least 300Mb of free space on the hard-drive. The QuickTime software from Apple will also be needed in order to present the media. QuickTime Player is freely available from Apple (<http://www.apple.com/quicktime/download/>). A TCP/IP connection should also be established between the two computers. It is recommended that for the purposes of testing the equipment this is done using a direct connection between the computers with the receivers computer assigned the address 192.0.0.1 and the senders computer 192.0.0.2. (If using an ethernet connection it may be necessary to use a crossover cable, the newer Macs autodetect whether they are connected to a network or another computer and so do not require a crossover cable). In this manner it will be possible to use the demonstration files provided with the software. It may be necessary to consult your user manual for details on how to configure your computer.

Instructions are provided below for setting up Apple computers with ethernet capabilities running OS 9. **Note that by following these instructions you will be changing your network settings. You will have to re-instate the current settings to use the current network again. Do not make these changes unless you are certain that you will be able to change your settings back.** Firstly go to the Apple Menu (top-left of the screen), and selecting AppleTalk from within the Control Panels. From the Connect via popup menu select Ethernet. Close the AppleTalk Control Panel (if prompted, you do want to save the changes). Then open the TCP/IP Control Panel. From the File menu select Configurations. Select the configuration named Default (or any other will do) and then click on the Duplicate button. You will be asked to provide a name for the settings, choose something appropriate such as DigiGanz and then OK. You will then be presented with the settings window which should have TCP/IP (DigiGanz) in the bar at the top of the window (assuming that you named the settings DigiGanz). You should use the following settings:

1. From the Connect Via popup menu select Ethernet
2. From the Configure popup select Manually
3. Under IP Address enter 192.0.0.1 for the receiver/experimenters computer or 192.0.0.2 for the senders computer
4. Select Close from the file menu. You will be asked whether you want to save changes, you should respond Yes. You will then be informed that you have not provided a subnet mask value and that an appropriate value will be substituted by the system, click Continue and the settings are made for the computer.

Having done this, there should be a connection between the two computers. This

could be tested by switching on a web server on one of the computers (this can be done using the Web Sharing Control Panel on Mac OS 9) and trying to access it from the other computer using a web browser (e.g. by turning on Web Sharing on the senders computer, launching Internet Explorer on the receiver/experimenters computer and entering 192.0.0.2 as the address of the page to be opened. This should display the page from the senders computer.

Installing DigiGanz

The CD is dual format for Mac OS and Windows. With a few exceptions (that are detailed below) the same files are available when opened under the Mac or Windows OS. To install under Mac simply copy the DigiGanz folder from the CD to your preferred location on your hard-drive. To install under Windows simply double-click on the DigiGanz Installer application. You will be presented with a dialog box asking you to select the location to install DigiGanz. Once selected a folder will be created in the desired location, and the files will be placed within it.

What is installed?

The DigiGanz folder contains the application itself and a number of files that allow you to run trials. You should have all the files that you need to test the system, but would probably want to use different materials for formal studies. If using MicNotePad Lite you should read the documentation that comes with it in order to check that you agree with the terms of use. In addition you will need to read the instructions for that application in order to setup that application (e.g. set the sound input device and file format). In addition it should be noted that in order to stream audio from the receiver to the sender audio broadcast software will be needed (see the list above). If using the Apple Classic environment, you could evaluate the CoolStream software.

In the folder there will be the DigiGanz application (the Classic and OS X versions on the Mac and the PC version on the PC), a copy of these instructions, and a folder named resources. Note that the OS X version of the application can run under OS 9 if CarbonLib is installed, but will have reduced functionality and therefore should only be used under OS X. On the Mac version there will also be a folder named helper applications. This contains MicNotePad Lite and CoolStream along with their documentation.

Within the resources folder there are a number of other folders that must not be deleted, moved or renamed. A description of each of these folders is given below.

The data folder

This is where the data is stored. Initially there will be three subfolders in this: experimenters, participants and senderData. When DigiGanz is set to act as the receivers computer the data is stored in the following locations within the data folder. Firstly it is stored in the file named compiledData.txt. A copy of all the trials for which the application has been used as the receivers computer is stored within this file. Next a copy of the data is stored in the file compiledData(*designName*).txt where *designName* is the name of the design used

for that trial. Only trials using that design are stored in this file. A copy of the data is also stored within the experimenters folder in the file by the name of the experimenter. This allows easy access to all the trials run by a particular experimenter. Finally copies are saved within the participants folder. Within this folder there are subfolders for each of the participants, and within each folder there are two files, one named sender and the other receiver. The data is added to the appropriate file for each participant.

One copy of the data is also stored on the senders computer. This is in the file compiledData.txt in the folder named senderData.

The logs folder

This folder should be left in place but is not used by the DigiGanz software when being used for studies. The folder was used to keep logs of communications between the receivers computer and the senders computer during the development of the system.

The media folder

This folder contains media used by DigiGanz during the trials. The media is organised in a number of subfolders in the manner described below.

In the subfolder blank there are the following files: blankforPlayer0, blankforPlayer1, blankforPlayer2, blankforPlayer3, blankforSessionPlayer. These are used by the system at various parts in the procedure. These files should not be changed and the folder must not be renamed, moved, or modified in any way.

The folder named preparations contains files that are played to the participants prior to the session itself. In ganzfeld procedures the preparation file for the receiver will probably take the form of a relaxation procedure. The file presented to the sender may contain instructions for the session or any other audio information that may be required. In the design it is possible to specify the same file or different files to be played to the sender and the receiver.

The rtsp contains QuickTime files that are used by the senders computer to receive an audio stream from the receivers computer through the use of the Broadcast software. These files are generated using the Broadcast software once the settings have been set within it.

The sessions folder is used to store audio files that are presented to the receiver during the session. A number of files are provided with the DigiGanz software. These files are audio files containing white-noise. The files vary in length from a short burst through to 60 minutes.

The volSounds folder contains audio files that can be played to the participants

in order to set the volume to a comfortable level. In the design of a study you specify one of these files to be used. The specified file is played to both the sender and the receiver.

The mentations folder

This folder is used to store the mentations of the sender and/or receiver when using the software under the Apple Classic environment using MicNotePad Lite. Inside the mentations folder there are two subfolders receiver and sender. The appropriate folder is used for the role that is being taken by the application (i.e. when being used for the receiver the mentations are stored in the receiver folder and when used for the sender the mentations are stored in the sender folder).

If MicNotePad Lite is used to record mentations, the mentations are stored in seven audio files representing the different stages of the procedure. The filenames take the form:

receiver yymmdd code stage

sender yymmdd code stage

Where the words receiver and sender are used to indicate the role of the person being recorded, yymmdd represents the date beginning with the year, then the month, then the day (this order allows listing the files by date), code is the trial code for the session, and stage represents the stage of the trial and takes the values 01 to 07. So a file named receiver 020510 tr12 03 would have mentation for the receiver for a trial run on the 10th May 2002. The trial code would have been tr12 and the file would be for the 3rd stage of the procedure.

The settings folder

This folder contains a number of subfolders that contain settings for the application. Each of the subfolders shall be described in turn.

The first of the subfolders is the application folder. This is used to determine the manner in which the software operates. The only setting that is of interest refers to the role that the application takes (i.e. whether it behaves as the software for the sender or the receiver). The role that the application takes is determined by the presence of a file named sender. If there is a file named sender within the application folder then the application will take the role of acting on the senders computer, otherwise it will take the role of acting as being on the receivers computer. It is important to note that the file must be named sender, if it has any form of extension (e.g. sender.doc or sender.txt) then it will not be recognised as being present for defining the role as being that of the sender. When installed there is a file named not sender in this folder. It is recommended that you do not delete this file, but instead use it to define the

role of the application by renaming it to sender if you wish it to take that role or renaming it to not sender to revert the functioning to being that of the receiver.

The designs folder is used to store designs to be used with DigiGanz. These are text files that list the settings that DigiGanz should use. A description of how to create these settings files is given later.

The experimenters folder contains files with details of the experimenters that have taken part in studies using DigiGanz. There is a text file for each experimenter containing their gender and date of birth.

The participants folder contains files with details of the participants that have taken part in studies using DigiGanz. There is a text file for each participant containing their gender and date of birth.

The targets folder

The final folder to consider is the targets folder. This folder is used to store the target pools to be used with DigiGanz. It is possible to have any number of target pools for use with different designs. To define a target pool you need to create a folder with the name of the target pool (as an example the target pool that comes with DigiGanz is named demopool). This folder is used to store the judging sets for that pool. Each set is defined by a subfolder within the target pool folder. Within each of these subfolders there should be four QuickTime movies that are the movies for that set. If we take the target pool that comes with DigiGanz as an example we see (by opening the folder demopool) that there are two judging sets (demoset1 and demoset2) each with four items (e.g. books, lamp, pushchair, and radiator for demoset1). It is important that the target pool folder contains only folders defining judging sets, and that these folders in turn contain the four movie clips and nothing other than that. The reason for this being that the software selects judging sets and the target based upon making listings of these folders and assumes that the items listed are folders or movies as appropriate. The exception to this is that it may be possible for an operating system (e.g. OS X) to create its own files within these folders. These, however, are subsequently ignored by the operating system when the software is running.

Creating design files

An important aspect of using DigiGanz relates to the creation of settings files. This part of the document describes how to create a settings file and gives some advice on troubleshooting.

All files containing designs must be stored in the designs folder that is inside the settings folder of the resources in order for it to be available for use with DigiGanz. The filename determines the name that appears within DigiGanz for selecting the design. The name must be less than 21 characters in length for it to be listed in the options.

It is possible to generate settings files from within DigiGanz or using a text editor. In order to define a new design using DigiGanz you should select New from the Design popup menu and enter the appropriate details in the text fields. The same end result can be achieved by using a text editor. The simplest method is to duplicate an existing settings file and then change the details. The design file that is created has the following format. It is a text file containing a single line of these with the following information:

```
ReceiverPreparationFile*SenderPreparationFile*SessionFile*SenderAddress*1969  
1*VolumeSoundFile*TargetPoolName*ReceiverLocation*SenderLocation*ShowGap*  
WhoToRecord*RTSPFile*ShowSenderOptions*RelayJudging*NumberOfShowings
```

The asterix (*) is used as a delimiter and therefore should not be used in any filenames etc.. The settings are as follows:

ReceiverPreparationFile replace this by the name of the file in the preparations folder that you want played to the receiver as preparation for the session.

SenderPreparationFile replace this by the name of the file in the preparations folder that you want played to the sender as preparation for the session.

SessionFile replace this by the name of the file in the sessions folder that you want played to the receiver during the trial

SenderAddress replace this by the IP address of the senders computer, for example 192.0.0.2 that is used for the demonstration settings (this setting can be changed when running a trial)

19691 this value should not be changed in this version of DigiGanz

VolumeSoundFile replace this by the name of the file located in the volSounds folder that you want played to the participants to set the volume for the session

TargetPoolName replace this by the name of the target pool to be used with this

design. This should match the name of the folder that contains the target pool.

ReceiverLocation replace this by a short description of the location of the receiver (e.g. the room number that they are in) (this setting can be changed when running a trial)

SenderLocation replace this by a short description of the location of the sender (e.g. the room number that they are in) (this setting can be changed when running a trial)

ShowGap replace this by the number of seconds that you want between the start of showing the target to the sender during the trial period. This, combined with the number of showings (see below), determines the trial length. If your target clip is 60 seconds long and you set the show gap to 90 seconds then there will be 90 seconds between the beginning of showings of the target. Therefore there will be 30 seconds between the end of the clip and the next time that it is shown.

WhoToRecord this setting is only used when using MicNotePad Lite to record the mentations under the Apple Classic operating system. The options to enter here are (do not use the quotes) sender, receiver, both, or neither. The software only actually responds to the sender, receiver, or both settings, otherwise it assumes that you do not want to record either.

RTSPFile replace this by the name of the real time streaming protocol file that should be used by the senders computer to establish a link with the broadcaster on the receivers computer. This file must be located in the rtsp folder on the senders computer.

ShowSenderOptions replace this with either yes or no (if you enter anything other than yes the software will assume that you mean no). If set to yes the sender will be shown the four items in the judging set at the same time as the receiver views them following the trial period but before assigning the ratings.

RelayJudging replace this with either yes or no (if you enter anything other than yes the software will assume that you mean no). If set to yes then the ratings being made by the receiver are relayed to the sender as they are being assigned. The ratings are relayed to the sender every 5 seconds.

NumberOfShowings replace this by the number of times that you want the sender to see the target during the trial period. The gap between showings is determined by the show gap option (see above).

Determining the length of the trial period

There are two factors to be considered when determining the length of the trial. It is partly determined by the length of the session sound that is played to the

receiver during the trial. Following the end of the session sound, the receivers computer waits for a message from the senders computer to say that the session is over. The senders computer makes a decision each time that the show gap has elapsed. The two outcomes are that it plays the target to the sender (if it has not been played the number of times set by the NumberOfShowings setting), otherwise it sends a message to the receivers computer to say that the sending period is over. This approach ensures that there is no sensory leakage concerning the target identity to the receiver or experimenter.

Before using the DigiGanz Software

Before using the DigiGanz software you should make sure that you have the two computers that you intend to use networked, and make sure that it is possible to establish TCP/IP communications between the two computers.

You should ensure that you have installed the software on both computers and that you have a recent version of QuickTime installed (the system has been developed and tested using QuickTime versions 5 and 6).

If you are using any helper applications such as Broadcaster software, or MicNotePad Lite you should read the documentation that came with them, become familiar with their functioning, and ensure that you are happy with the terms and conditions of using that software.

It is also necessary to configure the software to the settings you want to use before using DigiGanz (For example there are various formats for the audio recordings made by MicNotePad Lite that require differing amounts of disc space and result in differing audio quality. If the files are too large they may result in being unmanageable when running a study involving many trials. It should also be remembered that the software will be trying to read information from the hard drive as well as recording the mentations, and that the recording may interfere with the performance of the system as a whole).

Opening the applications in the correct order

It is important to open the applications in the correct order. If using the Apple Classic environment, and you are wishing to record mentations using MicNotePad Lite, the following order is recommended. Firstly open MicNotePad Lite, then the streaming software, and finally the DigiGanz application. When the DigiGanz software is opened it occupies the whole screen and hides the menu bar thus denying easy access to the other applications. It is not recommended to have other applications open in front of the DigiGanz software as this may interfere with its operation.

Using Streaming Software

This section gives a few pointers in terms of using streaming software to relay the receivers' intentions to the sender. Examples of applications that allow the streaming were provided earlier, these were: the commercially available Sorenson BroadCaster (www.sorenson.com) for the Apple Classic and Windows versions, CoolStream from Evological (www.evological.com) for Apple Classic (running OS 9), and the free QuickTime Broadcaster from Apple (www.apple.com) for Apple OS X users.

Whilst they all stream audio, there are differences between them. Sorenson BroadCaster and QuickTime Broadcaster both allow the audio stream to be recorded to the hard-drive of the computer. This is useful as it means that there is only the need for one audio input in order to achieve the aims of streaming the audio and recording it to disk. This is in contrast to CoolStream that only broadcasts the audio and does not have an option to keep a copy of the broadcast. In this situation two audio inputs are required and this is achieved by having an additional sound input device (in addition to the built-in device). Fortunately, however, there are now several USB audio devices for the Mac such as headsets with a microphone, or the iMic USB audio adapter from Griffin Technology (www.griffintechology.com). Also, there are benefits to using MicNotePad Lite to do the audio recording under Apple Classic because it splits the audio files into segments that correspond with the stages of the protocol.

One of the positive features of the DigiGanz system is that all communication between the sender's location and the receiver's location happens through the network link. However, it is important to consider the speed of the communication link when dealing with the audio streaming. If attempting to use the system with a very low bandwidth (e.g. modem to modem) it is possible that performance difficulties may occur as the low bandwidth will be used to transmit the audio and also the communications between the DigiGanz applications on the two computers. It is important to test the system fully when you have set up the streaming software.

Here, a couple of notes will be made in relation to using the CoolStream software. These are issues that I encountered when using it, but that may be specific to the particular configuration of the computers that I am using. Firstly, it appears that the settings are not always saved, therefore it may be necessary to set the sound input source each time that the software is used. Secondly, when switching between the tab panels some of the settings may be lost. I have experienced settings being lost when setting the options in the Broadcast tab, then moving to the Network tab, and then moving back to the Broadcast tab. When checking the settings for the broadcast it seems as though they have reverted to their default settings. This is not really a problem, simply

something to be aware of. Finally, some problems were encountered in relation to the speed of the audio (i.e. it was being played at half-speed by the senders computer) when using Built-in sound as the audio source. When using other sources (e.g. the iMic from Griffin Technology or a USB headset, this problem has not been encountered).

Finally, it should be noted that the DigiGanz software is only set up for audio streams, therefore the broadcaster software should be set to only stream audio.

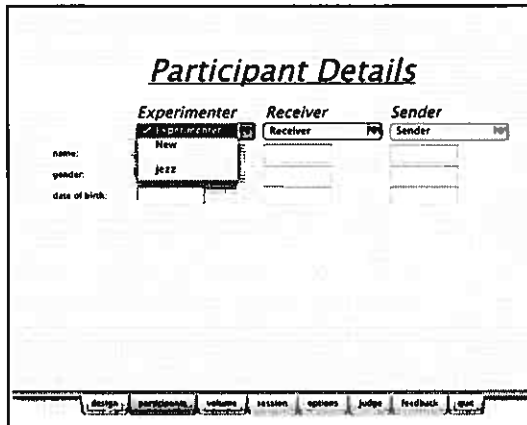
Using the DigiGanz Software

Below is a summary of the procedure as viewed from the experimenters perspective. Remember that the software can operate in sender mode or receiver mode. For it to act in sender mode there must be a file named sender in the folder named application inside the settings folder. For it to act in receiver mode, rename this file not sender.

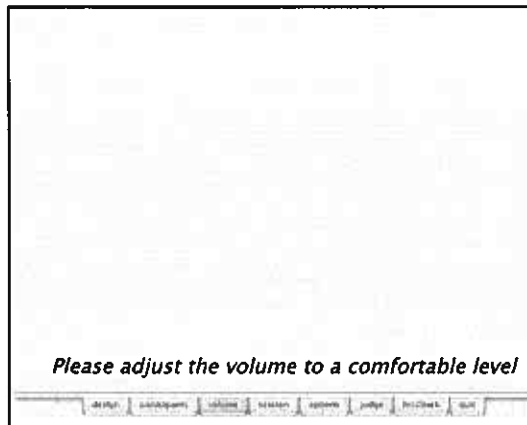
The screenshots presented below are from the Apple OS X version of the software. To move from one stage to the next, the experimenter should click on the next tab along the bottom of the screen. The panel is disabled until it is possible to move to the next stage. Sometimes it is merely a matter of waiting for the senders computer to finish what it is doing, sometimes it is up to the experimenter to enter some information before proceeding (for example a trial code needs to be entered to move from the stage of defining the design to entering participant details). In the Mac versions of the software messages are presented when it is not possible to proceed (e.g. because a trial by that code has already been run) whereas on the PC version there is simply a beep. It should also be noted that on the Mac versions the tabs are light grey when the panel is disabled (i.e. when it is not possible to move to the next stage) whereas this is not the case in the PC version. Therefore, when using the PC version a little more patience is required.

<u>Trial Details</u>	
Design	
<input type="button" value="Edit Design"/> demodesignsho... [F9]	
Receiver Preparation:	<input type="text" value="JPH00184a"/>
Sender Preparation:	<input type="text" value="GHTF0184C"/>
Session Sound:	<input type="text" value="W70840: 1410 107411"/>
Sender Address:	<input type="text" value="192.0.0.2"/>
Sender Port:	<input type="text" value="1940"/>
Volume Sound:	<input type="text" value="democ2448"/>
Target Type:	<input type="text" value="democ00"/>
Receiver Location:	<input type="text" value="Room10"/>
Sender Location:	<input type="text" value="Room02"/>
Show Case record:	<input type="text" value="1"/>
Record:	<input type="text" value="Both"/>
Audio Monitoring:	<input type="text" value="http://192.0.0.1:1920/02"/>
Show Sender Set:	<input type="text" value="OFF"/>
Relay Judging:	<input type="text" value="OFF"/>
Showings:	<input type="text" value=""/>
Trial	
Date:	<input type="text" value="25/07/07"/>
Time:	<input type="text" value="17:27:48"/>
Code:	<input type="text" value="demd"/>

The first thing for the experimenter to do is enter trial details for the session. The first stage in doing this is to select the design from the popup menu just to the right of the button with the text Edit Design. This will load the design. Clicking on the Edit Design button will allow the sender address, receiver location, and sender location to be changed for that trial. A trial code also needs to be entered before proceeding to enter the participant details



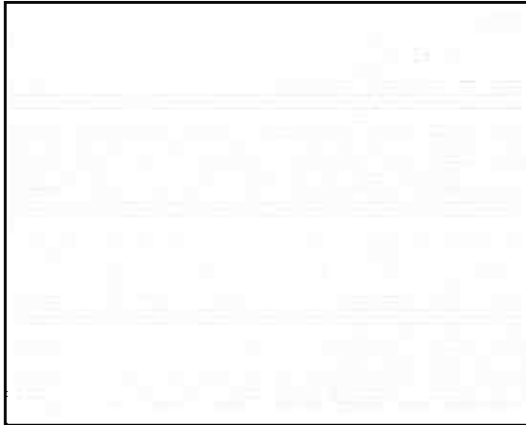
The next stage involves entering participant details. These can either be selected from the popup menus if the participants have already taken part in a study, otherwise new details can be entered by selecting the New option from the popup menu.



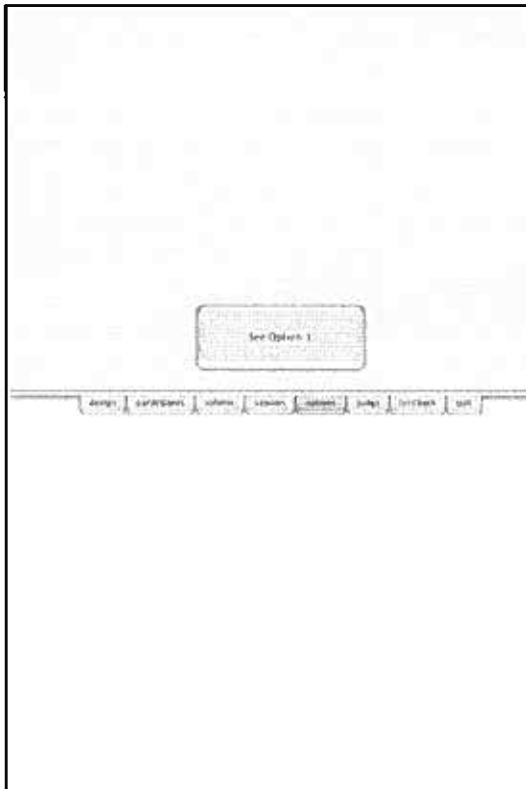
Next the sender and receiver are played an audio file in order to set the volume to a comfortable level. On the Apple Classic version there is a slider that can be used to adjust the level, whereas on the other versions this should be done using another method (e.g. through buttons on the keyboard, or control on the headset).



When the audio file has been played a message is displayed on the screen indicating that the software is ready for the session.



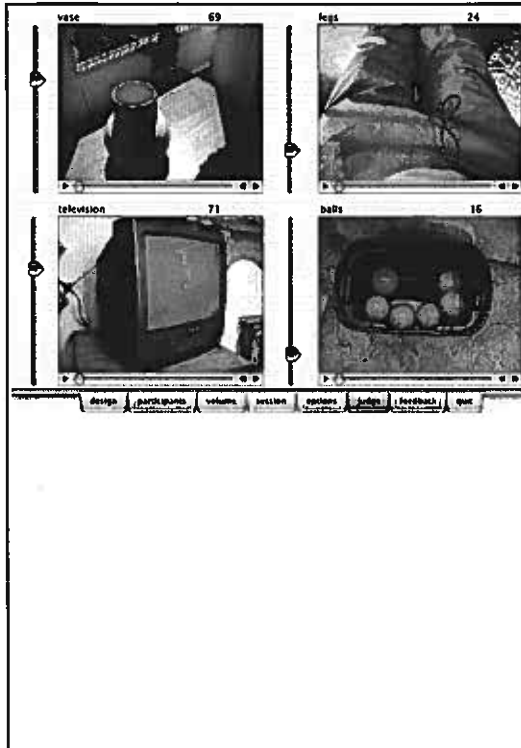
During the trial period the screen on the receivers computer is blank. At the end of the session the senders computer informs the receivers computer of the identity of the judging set (it does not inform the receivers computer as to which was the target at this stage).



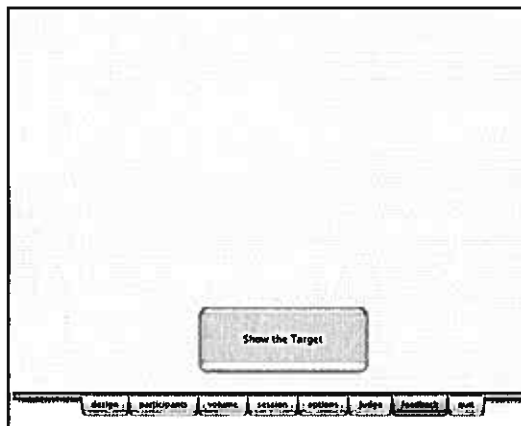
Following the session the receiver views the four items in the judging set. These are presented in a randomised order. Their showing is triggered by pressing an on-screen button. Initially this button is disabled (light grey) until the receivers computer receives a message from the senders computer indicating that it has shown the target to the sender the specified number of times. The amount of time that you have to wait depends upon the length of the session sound, the length of the gap between showings of the clip to the sender, and the number of times that the clip is shown to the sender during the trial period.



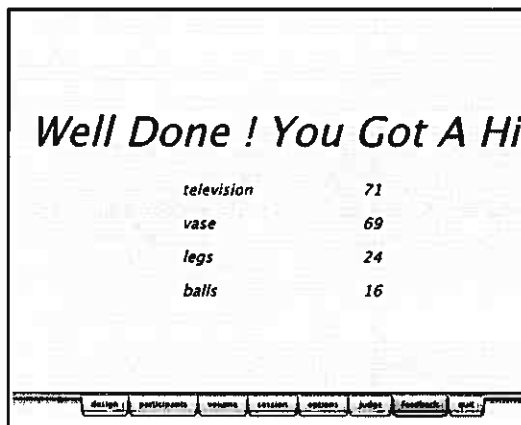
Once all four clips in the judging set have been viewed, the system is ready to move on to the stage of awarding ratings to the clips in the judging set.



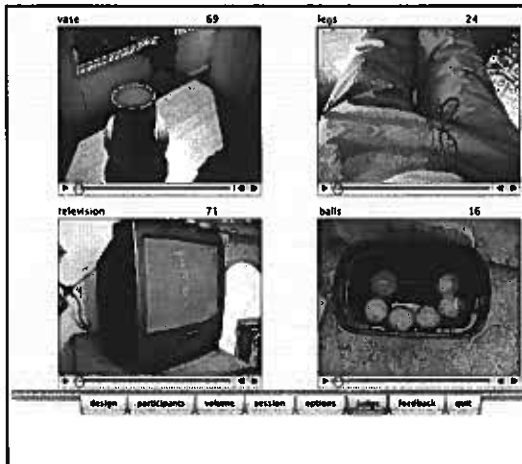
On the Mac versions of the software, the four clips are shown on the screen at once. These can be played one at a time or simultaneously (though the performance will depend upon factors such as the speed of the computer). Ratings are awarded using the vertical sliders to the left of each clip. Moving the slider changes the rating displayed above the clip (each clip must be awarded a unique rating). The clips names are simply the names of the QuickTime files. The PC version used a similar interface except that the clips can only be seen one at a time by pressing a button.



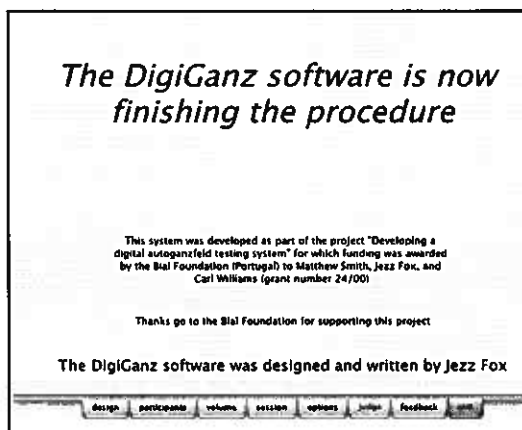
Once the ratings have been awarded, clicking on the feedback tab at the bottom of the screen saves the data for the session to disc. The sender's computer then informs the receiver's computer of the identity of the target for the session. The receiver can then view the target for the session.



Having shown the target, the receiver then receives a textual summary of the ratings with the target for the session highlighted in red.



Having received the textual feedback the trial is essentially complete. There are two options for the experimenter, they can either choose to press quit and end the session, or they can return to the judging screen to review the clips with the receiver (and possibly the sender). At this stage the sliders have been removed so that the ratings cannot be altered.





When the experimenter chooses to quit the software finishes the procedure and, after a pause of approximately five seconds, exits.


Below is a brief summary of how the trial is experienced by the sender. They are exposed to a similar, but simpler, interface. On the whole they are kept abreast of the progress through the session by on-screen messages.



If the software has been set to run in sender mode, the first screen to be encountered informs the user that the system is waiting for the receiver to connect.

<p style="text-align: center;"><i>Trial Details Are Being Entered....</i></p> 	<p>Once the design has been set and a connection between the receivers computer and senders computer has been established, the message changes to state that trial details are being entered.</p>
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<p style="text-align: center;"><i>Please adjust the volume to a comfortable level</i></p> 	<p>Next the sender and receiver are played an audio file in order to set the volume to a comfortable level. On the Apple Classic version there is a slider that can be used to adjust the level, whereas on the other versions this should be done using another method (e.g. through buttons on the keyboard, or control on the headset).</p>
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<p style="text-align: center;"><i>The Preparation And Trial Periods Will Begin Soon....</i></p> 	<p>The sender is then informed that the preparation and trial periods are about to start.</p>
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During the trial period the sender is shown the target a number of times.



When the receiver is viewing the items in the judging set it is possible for the sender to view them at the same time by setting the Show Sender Set setting to yes.

Judging is taking place

Current ratings are shown below (the target is in red)

vase	69
legs	24
television	71
balls	16

When the receiver is awarding ratings to the items it is possible to keep the sender informed of the ratings by setting the Relay Judging option to yes.

The ratings have now been completed

Well Done ! You Got A Hit

<i>television</i>	<i>71</i>
<i>vase</i>	<i>69</i>
<i>legs</i>	<i>24</i>
<i>balls</i>	<i>16</i>

When the receiver has finished awarding the ratings to the items, the sender is given textual feedback as to whether the trial has resulted in a hit or a miss.

design | attributes | values | colors | styles | fonts | graphics | etc.

Notes and tips when using the software

The final section of this manual aims to present some tips that may help in the use of the DigiGanz system. Please bear in mind that the software was developed for use within the Apple Classic environment (specifically OS 8.5 through to OS 9.2) and that support for the other operating systems is not as great. If you find a problem then a report of it would be welcomed with as much detail as possible as to when it occurred. Ideally it would be good to know whether the problem is repeatable or seems to happen erratically. Unfortunately no guarantees can be made that changes will be made to the software as the funding for the project has now ceased.

Known issues

There are only two known issues. The first concerns some problems playing the audio tracks of the targets under certain circumstances. This has only been noted with the software being used on iMacs (the problem has not occurred on iBooks or PCs) and it looks as though it only happens following a computer crash, or sometimes after switching between OS X and OS 8/9. The problem has resulted in whitenoise being played instead of the audio track when viewing items in the judging set. It does seem as though this is limited to following computer problems though.

The second issue concerns running the software on iBooks. It appears that when the software is loaded it sets the computers volume to 0. Therefore it is recommended that you raise the volume once the software has loaded.

Quitting DigiGanz

The DigiGanz application does not have a menu bar. If you need to quit the application you must use the key combination of Apple Key + Q on the Mac or the Control Key + Q on the PC.

Filenames in the settings file

A detail that may cause problems relates to the DigiGanz software being unable to find the files specified in the settings. There are a number of possible reasons for this. Firstly it should be ensured that the files exist in the correct locations in the resources folder. It is also important to ensure that the files exist on both computers (it is easy to update one without the other). It is also important to ensure that the names typed into the settings have been typed in correctly as any errors in spelling will result in the software being unable to identify the intended file. The final point to mention here concerns the use of extensions. If creating media on a PC it is likely that the files will be given appropriate file extensions for the file-type (e.g. .mov for QuickTime movies).

These are not always visible when looking at the files, therefore you may specify the name of a file as myfile when in reality its name is myfile.mov. When the application tries to open the file myfile an error will occur because the file does not exist.

As a final note on filenames, it should be noted that the names of the video clips are taken from their filenames and so may have the .mov extension. If you want to remedy this you will need to remove the .mov extension from the files.

Long pauses at the end of the session before being able to view the judging set

This problem may occur if the settings you have for the number of showings of the target to the sender and the gap between showings do not match the length of the session sound played to the receiver. For example, if the session sound is 10 minutes long and you want the sender to see the target twice during the session, it would be recommended that you set the show gap to a value around 305. This would leave 305 seconds (5 minutes and 5 seconds) between showings. The sender would be shown the target at the beginning of the session, then 5 minutes and 5 seconds into the session. 10 minutes and 10 seconds after the start of the session the senders computer would send a message to the receivers computer to indicate that the trial period is over. This would leave approximately 10 seconds of waiting at the end of the trial period before being able to view the judging set. With showing the target 4 times to the sender and keeping the show gap at 305 seconds the senders computer would not send a message to the receivers until 20 minutes and 20 seconds after the start of the trial, thus leaving a wait of over 10 minutes. Some thought needs to go into the planning of these timings.

On the PC version I get beeped at

Due to issues encountered when compiling the PC version, several changes had to be made. Firstly, when awarding the ratings you cannot see all four clips at once. Secondly it was not possible to show alert messages when errors occurred. In order to overcome the second problem it was decided to use simple beeps when an error occurs. It is acknowledged that this is not ideal, but it was the only method of releasing a PC version (it is hoped that someone may use this version as the basis for a PC version developed on a PC). Some of the things that may cause a beep are: no trial code has been entered, a trial by the trial code provided already exists, that the same rating has been given to two of the items during judging, or that the receivers computer is not ready to proceed to the next stage. Note that a method of controlling the procedure is through enabling and disabling the tabs at the bottom of the screen. Unfortunately on the PC version there is no visual indication as to whether the panel is enabled or disabled.

A design does not appear in the popup menu of designs

In order for the design to appear the file must have been saved as text only, must have been saved in the designs folder, and its filename must have been less than 21 characters (including the .txt extension if added by the application that created it).

Interpreting the data file

The data is stored as tab-delimited text. This is best viewed in a spreadsheet using an application such as Microsoft Excel. There is one row of data per trial. The order of the data in the file is as follows. The first columns have trials details for the date, time, and trial code. Following this are details of the design as outlined in the section describing how to create a settings file for a new design. Following this are the names of the items in the judging set along with the ratings awarded to them (they are recorded in the order in which they were presented to the receiver). These are followed by the name of the design and the name of the judging set. These, in turn, are followed by the participant details (including those of the experimenter). The data ends with the name of the target and the rating that it was awarded.