The Grid 2

Reference manual

Revision 1.1

Sensory Software International Ltd

1.   Welcome to The Grid 2

The Grid 2 allows people with physical and sensory disabilities to communicate.

ACCESS FOR EVERYONE

The Grid 2 has been designed to be universally accessible. It can be used by people with a wide range of physical difficulties who can take control with a mouse, touchscreen, head pointer, switches or other access methods.

VOICE OUTPUT COMMUNICATION...

The Grid 2 is used to create powerful communication systems for people with no speech or limited speech. There is full support for symbols users and The Grid 2 comes with high quality voices for voice output communication.

...AND MORE

The Grid 2 is a complete environment for using a computer. The software includes word processor, email, web browser and other tools within the grids providing broad functionality in a controlled environment. The Grid 2 also provides computer control for access to other Windows applications.

1.1. Communicating with The Grid 2

One of the main uses of The Grid 2 is as a Voice Output Communication Aid (VOCA), and high quality voices are included in the package.

The Grid 2 provides 4 different options for constructing communication sentences:

INSTANT SPEECH

As soon as a cell is selected, the associated text is spoken.

SIMPLE SYMBOL CHAT

Each word or phrase selected appears as a symbol in the sentence bar.

This is the same as the symbol output that is available in The Grid version 1.

SYMBOL CHAT

Words appear in the sentence bar with symbols above them. Words can be edited using the keyboard or other cells.

TEXT CHAT

Words appear as text in the sentence bar. The text can be edited using the keyboard or other cells.

These different ways of building sentences allow users to progress from instant messages through symbol sentence construction and on to writing with text. More information about the different ways of writing sentences can be found in the chapter on Workspaces.

1.2. New ways to communicate

In addition to voice output communication, The Grid makes new communication technology available to users of all ability levels.

EMAIL

You can send and receive emails using The Grid 2, as long as your computer is connected to the internet.

Note that you will need an email account; this is not provided with The Grid 2, but instructions for setting up a free email address are available.

SMS TEXT MESSAGES

Sending and receiving SMS messages is possible if you have a mobile phone with Bluetooth connection.

Messages for SMS and email can be written with or without symbol support. The messages are sent and received as plain text (without symbols), and can be read aloud using The Grid's speech output.

1.3. Beyond communication

The Grid 2 does more than just communication! You can browse the web, use the built-in calculator or listen to music stored on your computer. There is also a word processor for writing and saving documents within The Grid 2.

Additionally, The Grid 2's computer control provides access to Windows programs without a keyboard and mouse.

> *Computer control grids can be used in place of a physical keyboard and mouse. They can include symbols and special cells for launching programs and accessing program functions directly. You can also use communication grids to write into Windows programs.*

2.   Using The Grid 2 for the first time

2.1. Installing The Grid 2

Start the installation by putting the CD into your computer's CD drive.

> *If the installer does not automatically start after a few moments, go to My Computer and double-click on the CD drive.*

When the installer starts, follow the instructions to install The Grid 2 onto your computer.

If you are installing onto a network, please see the separate guide for network installations.

2.2. Installing your speech

Insert the speech CD into your computer and the installer will auto play. If you are unsure which voice you wish to use, install all the voices for your language.

2.3. Launching The Grid 2

Once the installation is complete you are ready to start using The Grid 2!

You can launch The Grid 2 from the Start Menu:

Start > Programs > Sensory Software > The Grid 2

The first time that you run The Grid 2, it launches Grid Explorer (you can change this later – see Program Preferences).

If you haven't used The Grid 2 before, you may want to read chapter 3 to get started.

2.4. Licensing The Grid 2

The Grid 2 installs as time-limited software that you can use for evaluation. If you have purchased the software, you will need to use your licences for The Grid 2 and for the speech.

3.   Finding your way around

This chapter will take you through the program to introduce the basics. If you've used The Grid or similar software before, you might want to skim this as much of it will be familiar, but some of it is exciting and new.

3.1. Users, grids, grid explorer – oh my!

Before we get into too much detail, a quick summary of the terminology and concepts in The Grid 2 might be useful.

- **Grids** are the screens that are seen most of the time when working in The Grid 2. They consist of a number of buttons, called **cells** which will write into the sentence, speak or perform other actions. Grids usually have a sentence writing area called the **workspace**. Grids are sometimes referred to as pages.

- **Users** are the people who use The Grid 2. The Grid 2 has been designed to allow more than one person to share a computer. As the needs of each person may be quite different, each user has their own set of grids and unique settings for access and speech.

- **Grid Explorer** provides a user-friendly way to see your users and their grids, and make changes such as copying or renaming grids.

- The **Grid Player** is used to view and edit grids.

3.2. Grid Explorer

Grid Explorer allows you to view users, and edit and share their grids easily. When you start The Grid 2 you will be taken to Grid Explorer.

If The Grid 2 starts with a screen that is very different from the one below, you have probably changed your

1) *If you can't see a menu bar at the top of the grid, press F12 to display it.*
2) *Select **File > Grid Explorer** from the menu.*
3) *Click on the **View users** icon in the toolbar.*

The Grid Explorer window is divided in to 2 main regions. On the right, filling most of the window is the list of grids or users that you are viewing. To the left is a context-sensitive list of options; as you select different users and grids, the options presented in the explorer bar will change to reflect the most useful actions.

There is also a toolbar and a menu bar at the top of the Grid Explorer window for accessing other functions.

EXPLORING USERS

When you start The Grid it displays a list of users. Click on one of the users and you will see that the options on the left change to show the common tasks that can be performed – things like renaming the user or creating a backup of the user's files to a CD.

You can also use Grid Explorer to see a list of grids for one of the users on your computer. Click on one of the users to highlight it, and then select **Explore User**.
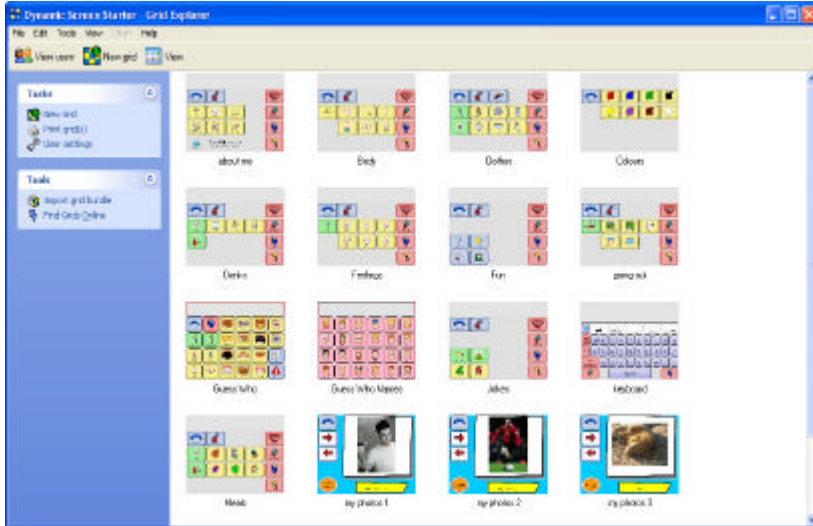
When you are viewing grids, you can create new grids, copy grids and share grids. You can display the list with a thumbnail of each grid (to make it easy to identify grids) or as a chart showing how the grids link together. To change the view in Grid Explorer, select the **View** button on the toolbar.
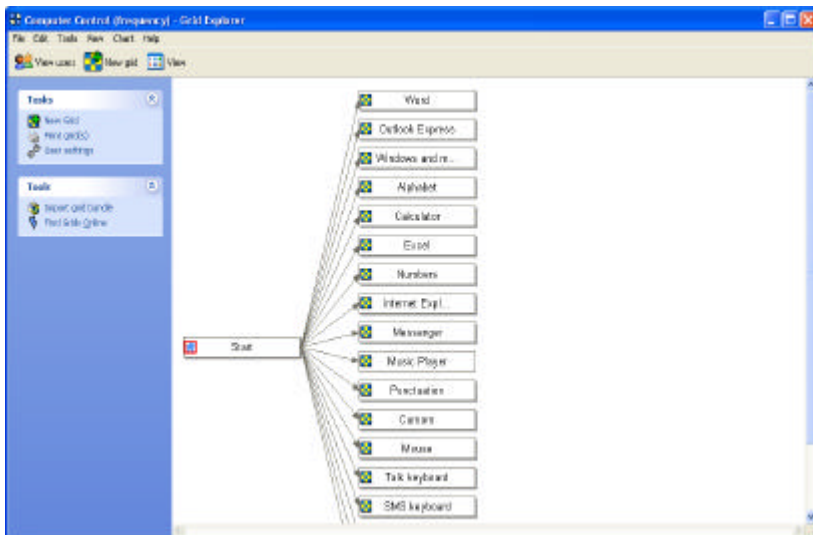
ACTIVATING A USER

If you are not viewing a list of users, click on the **View users** button on the toolbar.

We're going to move on to look at other parts of The Grid 2 now, but if you want to know more about Grid Explorer, you can refer to chapter 15.

You can now activate one of the users by double-clicking on the user, or selecting **Activate User** from the bar on the left.

3.3. Grid Player

When you activate a user, it launches the Grid Player. This is the interactive environment that allows users to communicate, listen to music, go on the Internet and all the other brilliant things that The Grid 2 offers.

The appearance of the Grid Player can vary widely, according to the user settings and the user's grids. Some users will have grids with just a few large cells for simple communication choices; others will have more complicated grids with many cells for flexible and fast responses in conversation; and others might have an on-screen keyboard that occupies a corner of the screen for interacting with Window applications.

Most grids have a **workspace**, a largish rectangular area for constructing sentences and other activities. The workspace is very flexible – it can be used for writing symbol sentences, sending emails, browsing web pages and more.

3.4. Editing grids

In addition to interacting with grids, Grid Player is used for editing grids. To make changes to a grid you can press **F11** to enter Edit Mode. When editing, there are a few extra areas on the screen layout:

- The bar on the left provides access to common tasks.

- The tool bar allows you to perform actions such as saving changes, or opening a different grid.

- The main part of the screen (the grid area) allows you to move, resize and edit cells.

4. Introduction to Workspaces

Most grids have a large box at the top for writing into. As you will soon discover, this box, called the workspace, is very flexible and can be used to write emails, do calculator sums, play music and many more things. It can also change size, so it might be a strip along the top of one grid, but occupy most of another grid.

There are quite a few workspaces (and we hope to add more in the future), so it helps to consider them in groups with similar functionality.

VOICE OUTPUT COMMUNICATION WORKSPACES

These workspaces are primarily intended for communication. The user constructs sentences in the workspace, and the sentence is then spoken aloud.

- Text chat
- Text chat + messages
- Symbol chat
- Simple symbol chat

These workspaces allow remote communication using different ways to send messages.

- Email

- SMS

- Contacts

The remaining workspaces are not for communication, but provide other valuable features for users of The Grid 2.

- Word processor

- Web browser

- Calculator

- Music player

- My settings

- Clock

- Computer control

Here is a more detailed look at these workspaces, with a summary of what each is used for.

4.1. Text chat workspace

The text chat workspace provides a place for the user to write sentences for speaking. Text can be entered via grids with single letters, words, phrases or even complete sentences. A keyboard can also be used to type into the text chat workspace.

4.2. Text chat + messages workspace

The text chat + messages workspace is very similar to the text chat workspace, but the user can store messages and easily recall messages that were stored previously. Users can also maintain several lists of messages.

4.3. Symbol chat workspace

Symbol users can construct sentences with symbols and text, providing support for literacy.

The symbol chat workspace can also allow users to save their sentences, either to speak later or as evidence of work.

4.4. Simple symbol chat workspace

This provides a really basic way to start building sentences. Sentences are constructed block-by-block and the user can understand how the selections correspond to the changes in the sentence bar.

4.5. Email

Your inbox provides the starting point in the email workspace. From here you can read emails that have been sent to you, and reply to them or delete them. You can also start a new email. An internet connection is required to send or receive email.

4.6. SMS

The SMS workspace allows you to send SMS messages via a compatible mobile phone.

SMS messaging is often called text messaging or texting. We have referred to it as SMS messaging to avoid confusion between the SMS workspace and the text chat workspace.

You can read SMS messages that have been sent to you, or send new messages to friends.

4.7. Contacts

The contacts workspace is used with the SMS and email workspaces to select who the messages are sent to.

4.8. Word processor

The word processor workspace allows users to write documents and change formatting such as font style, bold, italic and text alignment. Users can then save their documents and edit documents that were written earlier.

4.9. Web browser

Computers with an internet connection can browse web pages via the web browser workspace. You can exclude certain websites, or limit the user to a 'white list' of sites if you like. You can also override any font size and colour settings to make pages more accessible.

4.10.   Calculator

The calculator workspace allows the user to perform simple arithmetic.

4.11.   Music player

The music workspace provides easy access to your entire music collection. Music is stored and organised using Windows Media Player, and The Grid 2 automatically discovers what music you have and allows users to play tracks with ease.

4.12.   My settings

This workspace allows users to see the battery life and volume level on their communication aid.

4.13.   Clock

The clock workspace displays the current time. You can have an analogue or digital display, with the option to display the date and other settings too.

4.14.   Computer control

Computer control is a special workspace, and it works slightly differently from the other workspaces. When

the workspace is active, the grids are not displayed full-screen; they occupy a small part of the screen to allow the remaining space to be used for other Windows programs. The Grid 2 can be used to write into these other programs, as well as move the mouse pointer and interact with Windows in other ways.

4.15. No workspace

For really simple communication, you may wish to have a grid that does not have a workspace. This is discussed later in this book.

5. Editing grids

You will want to edit grids right from the start with The Grid 2, to customise them for a particular user or add additional features.

5.1. Before you start

Before you dive in and start editing, please consider what you are going to edit.

You could create a new user, a blank slate, and start making cells and grids from there. If you're making a small number of grids this will be fine, but for a larger communication system you should consider adapting grids that are already available.

We have a wide range of grids available for The Grid 2, including free grids provided with the software, extensive symbol vocabularies that have been authored by experienced speech therapists, and grids that other users have made and shared online. Through these routes, you will often find that the grids you want have already been created. It is definitely worth checking to see what is available before you set about creating a large number of grids.

SENSORY SOFTWARE GRIDS

The Grid 2 is provided with a number of users that are ready to go. These provide communication systems for a variety of typical users, and it is worth looking at each of these in detail to see if they provide what you are looking for.

GRID SETS / VOCABULARIES

The grid sets available for The Grid 2 include **Ingfield Dynamic Vocabularies**, **CALLtalk** and **WordPower**. These carefully thought out, systematic sets of grids have been designed to provide effective communication for different user requirements.

The online grids service allows anybody to share grids. Other people may have created Grid 2 communication systems that meet your needs, or have ideas for grids that you can use.

If you do have a new idea and you create grids that others might find useful, please consider sharing them online.

> *The online grids website can be found at:*
>
> http://grids.sensorysoftware.com

You can read more about online grids in section 17.

CUSTOMISATION

If you choose to work with a grid set that has already been created, you will almost certainly want to start by editing these grids.

You may wish to create a copy of the original grids so that you can reverse any changes you make. The easiest way to do this is through Grid Explorer. You could make a copy of the user, or consider burning it to a CD for safe-keeping.

5.2. Commence editing

Locate the grid that you wish to edit and start editing by pressing **F11**. If you wish to experiment, it is a good idea to start on a grid with some blank cells.

THE EDITING SCREEN LAYOUT

The Grid Player window changes slightly when you are editing. There is an extra bar to the left with options and a toolbar at the top of the screen.
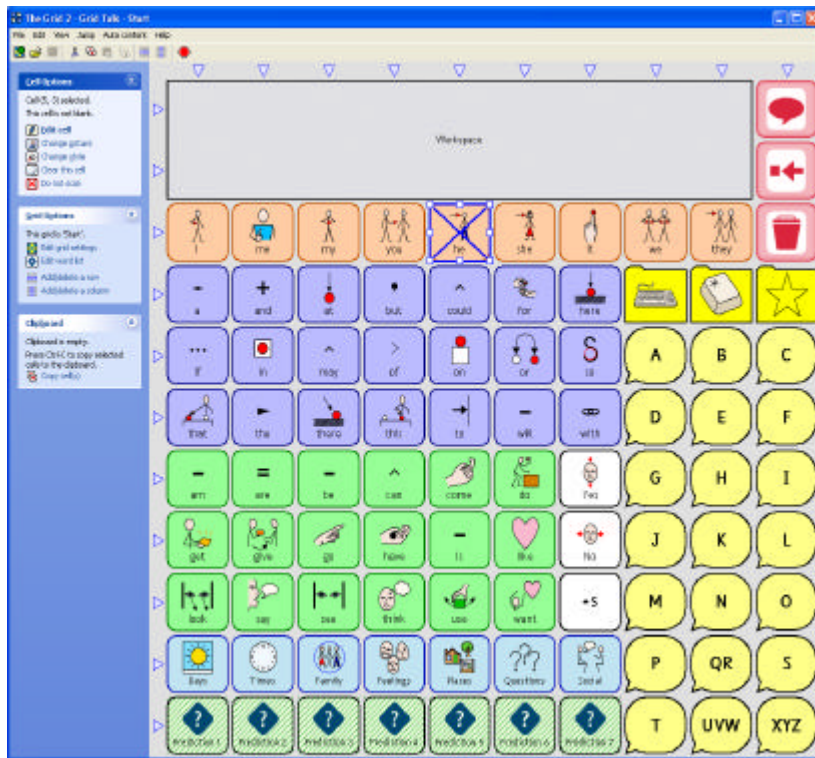
We'll discover what all these options do later, but first of all let's try editing some cells.

5.3. Creating a vocab cell

Vocabulary cells are the meat of communication grids. You'll be creating these pretty often if you are making grids for talking, so we've tried to make it as easy as possible. Follow these steps to make a vocab cell:

1. Choose a blank cell to edit.

2. **Left click** on the cell using the mouse. The cell will get a blue border with a cross through the middle to indicate that it is selected.

3. On the left-hand side of the screen, click on the words **Edit Cell** that appears at the top of the list of cell options.

4. **Type** the word that you want to be written in the cell.
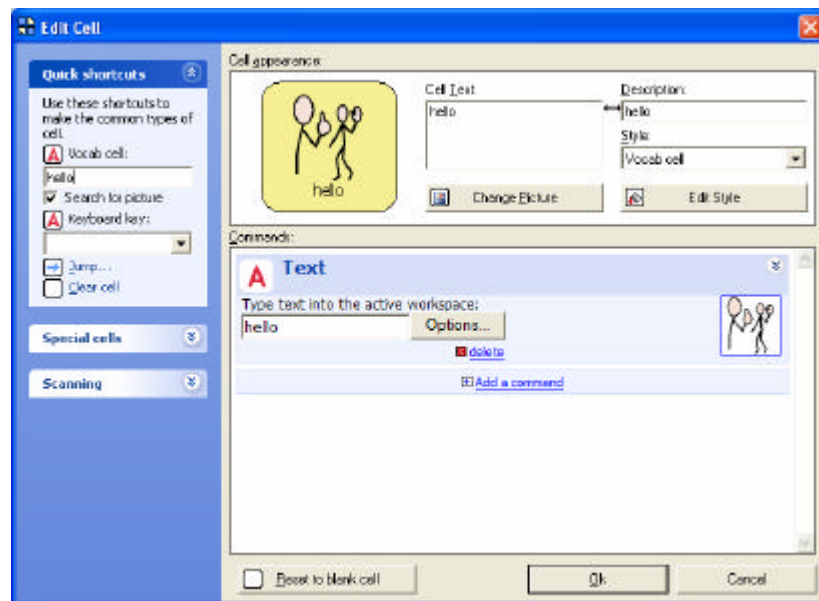
5. Click **Ok** to accept the changes to the cell.

Wow! That was pretty easy, but there was actually quite a lot going on there. Let's run through it again more slowly to see what happened.

1. Select another blank cell. As you already have a cell selected, you could just use the **arrow keys** on the keyboard to move the selection around. This means that you don't need to use the mouse – very handy for saving time.

2. When you select a cell, the **Cell Options** on the left of the screen show the actions available for that cell. The first option is **Edit Cell**, and to make things really quick this can be activated with the **enter** key.

3. When you edit the cell the **Edit Cell** window appears. This is split into 2 areas, *cell appearance* and *commands*, with a bar of common tasks on the left. This window gives you complete control over what happens when the user selects the cell - we'll look at it in more detail later, but for now we just want to type. The text cursor will already be blinking in the **Vocab cell** box on the left, so type in there. As you type, you'll see that the word(s) you write

appear in other places, and a picture is displayed automatically if one can be found. You may also notice the cell change colour. This all happens because The Grid 2 knows which settings are common for most vocab cells – leaving you to just type a word with the rest taken care of for you.

4. You then click **Ok** (or press **Enter**) to accept the changes – but you may wish to check that the picture is ok first! If you don't like the picture that has been located, click on **Change Picture** and you can select a different one.

5.4. Selecting cells

You can select a cell using the mouse or the keyboard.

To select cells using the mouse, simply click on the cell that you want to select. You will see a blue border around the cell and a blue cross through the middle of the cell. To deselect it, click on it again.

You can use the arrow keys to move the selection around to different cells.
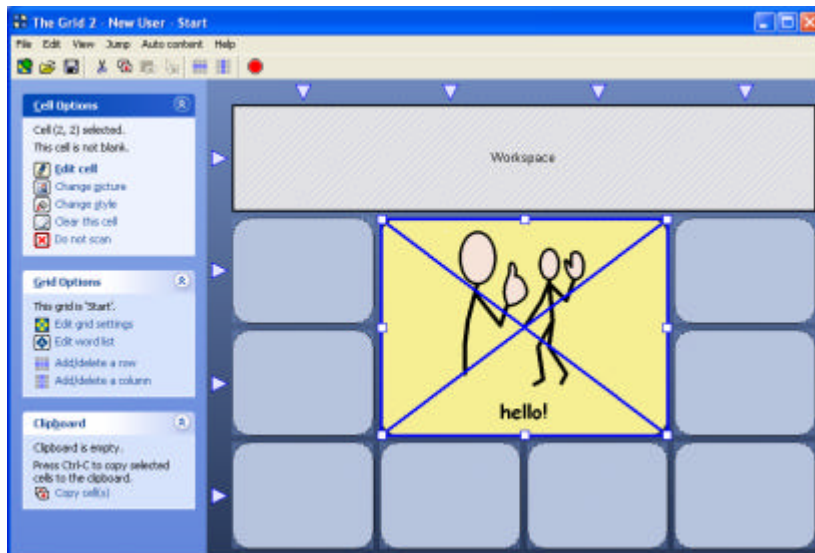
SELECTING MORE THAN ONE CELL

To select more than one cell, you can hold the **Ctrl** key whilst clicking on cells. You can also drag the mouse

whilst holding the control key to select a number of cells.

You will notice that the workspace is a cell that can be selected just like any other cell.

5.5. Moving and resizing cells

If you have one or more cells selected you can move them by dragging them with the left mouse button to the place where you want them to be.

Note that when you drag a cell onto another cell, the cell that it covers up is deleted.

When you have just one cell selected, you can resize it. Around the edges of the cell are white boxes. Place the mouse pointer over one of these and drag it away from the centre of the cell to make the cell larger.

5.6. Cell options

When you select a cell in Edit Mode, the **Cell Options** (visible on the left of the screen) displays the most common actions for the cell selected.

Here is a quick summary of the available actions, with the shortcut keys noted where appropriate:

Notice that the cell options available change slightly according to what you have selected – not all options are available for all cells.

EDIT CELL (ENTER)

This opens the Edit Cell window for the selected cell.

CHANGE PICTURE (P)

You can change the picture in a cell by selecting change picture.

CHANGE STYLE (S)

The style of a cell determines what it looks like, including the colours used and the shape of the cell. We'll look at styles in more detail later.

REALLY USEFUL CELLS

Selecting really useful cells gives you a selection of common cells to choose from when making a grid.

CREATE A JUMP CELL (J)

Make a cell that jumps to another grid. This is very useful as it allows you to link grids together. You can also jump to the 'home' grid or jump back to the previous grid.

AUTO CONTENT CELL

Auto content cells are special cells that are filled in when The Grid 2 is running, for example prediction cells that anticipate what the user might be writing.

CLEAR THIS CELL (DELETE)

Remove the picture, text, description, style and any commands from the cell.

INCLUDE IN SCAN / DO NOT SCAN (0 - ZERO)

You can mark cells to be excluded from a scan so that switch users cannot access them. Cells that have been excluded in this way are marked with an X in a red box in the corner.

FOLLOW JUMP (F)

If you select a jump cell, you get the option to follow the jump. This allows you to edit the grid that this cell jumps to.

5.7. Saving your changes

Once you are happy with the changes that you have made, you can save the grid to commit the changes. To do this, click on the **Save** icon on the toolbar.

When you have finished editing, click on the **Stop** icon on the toolbar, or press **F11**, to leave Edit Mode and see how the grid looks. If you have made changes that are not saved, you will be asked if you wish to save the changes.

5.8. Adding or removing cells

You may decide that the grid you are editing does not have the right number of cells – you may want an extra row or column.

ADDING A NEW ROW OR COLUMN

To insert a row (or column) click on the triangle at the end of the row, and select **Insert row above/below**.

DELETING A ROW OR COLUMN

Similarly, to delete a row (or column) you can click on the triangle and select **Delete row**.

5.9. Jumping

Almost all users will have more than one grid, and these grids are linked by jumps. When a user selects a jump cell, the destination grid is opened.

There is no hierarchy or ordering of grids in The Grid 2; any one of the user's grids can jump to any other grid.

To create a jump cell, select a blank cell and press **J**. This will show the "jump to..." dialogue, which allows you to select the grid you want to link to.
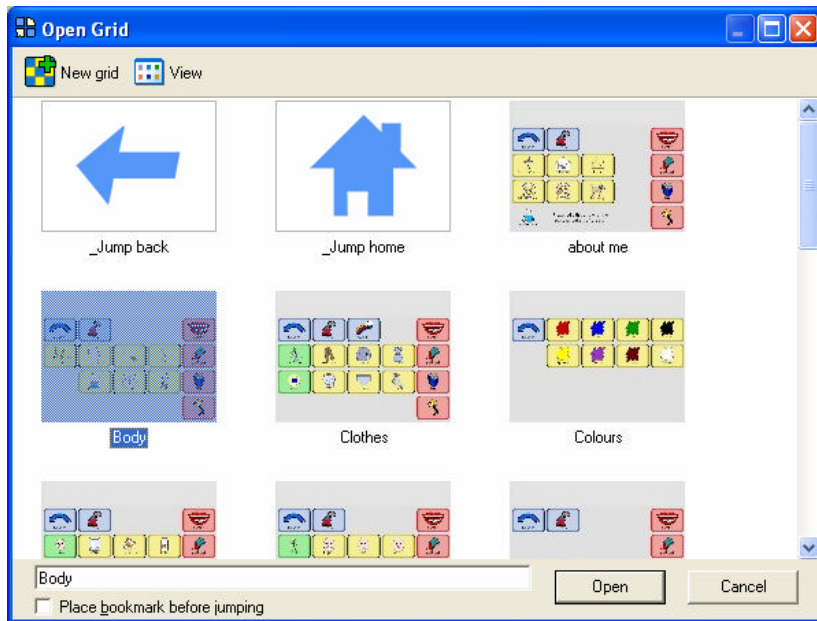
JUMP BACK AND JUMP HOME

There are two 'special' jumps that you can make, jump back and jump home. Unlike other jumps, these do not jump to a named grid. Jump back jumps to the previous grid viewed, and jump home goes to the user's designated home grid (this is the first grid displayed when the user is loaded).

Grid Explorer allows you to select which grid is the home grid for each user. The start grid is marked with a red box in Grid Explorer.

JUMP TO A NEW GRID

You can create a new grid when you are making a jump cell. To do this, click on the **New Grid** icon in the toolbar of the "jump to…" dialogue, and enter the name for the new grid.

SELF CLOSING, POP UP AND BOOKMARKED GRIDS

There are some cool things you can do to reduce the number of times a user has to select a 'jump back' cell. These are covered in more detail in chapter 6.

5.10.   Changing how a cell looks

Often you will want to change the appearance of a cell, to help distinguish it from other cells.

For each cell you can change the text, picture, description and style. Style determines the colour, font and shape of the cell. To change these settings for a cell, open the Edit Cell window and look at the Cell Appearance portion of the window (at the top).
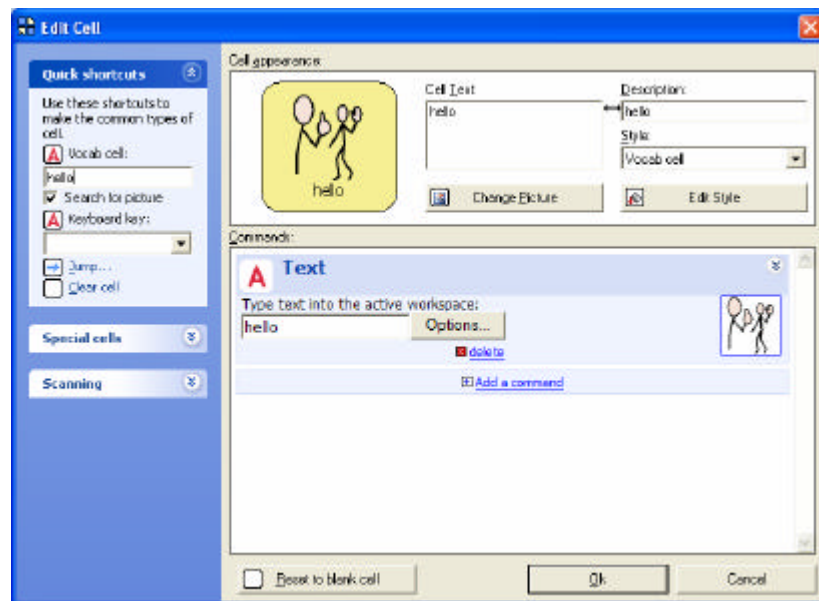
CHANGING THE CELL TEXT

The cell text is the text that appears in the cell. You can type whatever you want in here.

*Tip: you can use **Shift+Enter** to split the cell text over more than one line.*

CHANGING THE CELL DESCRIPTION

The cell description is used for auditory feedback (providing spoken descriptions of each cell to aid the user) and for tooltips (written descriptions that appear if the mouse pointer hovers over a cell).

The cell description is linked to the cell text so that if you change one, the other changes too. If you want to change the text or the description independently then click on the link to break it.

Click on the **Change Picture** button to change the
picture in the cell. You can:

- Find a picture from the picture library. Type
  different words to try and find the best picture.

- Capture a picture from the screen. This could be
  a picture on a web page or from a digital camera.

- Browse for a picture file saved on your computer.

- Choose not to have a picture for the cell.
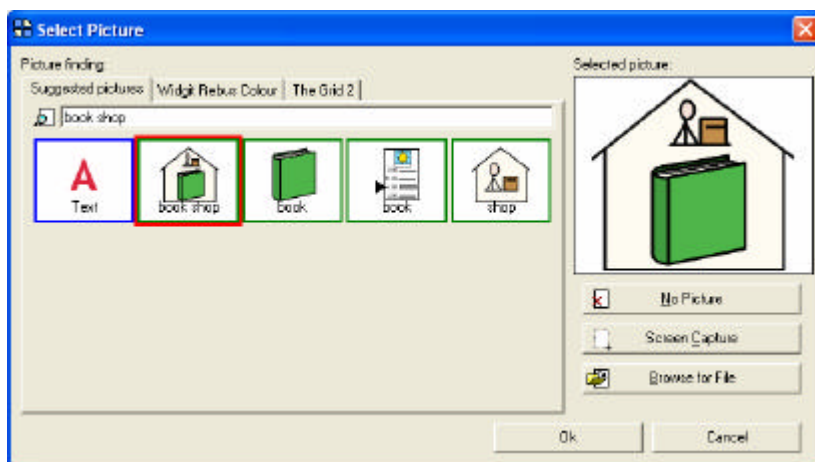
CHANGING THE STYLE

You can select a preset style from the list of styles, or
click on the **Change Style** button for more options. The
style of a cell includes:

- Text font and size

- Colour of border, background and text

- Shape of the cell background

- Picture size
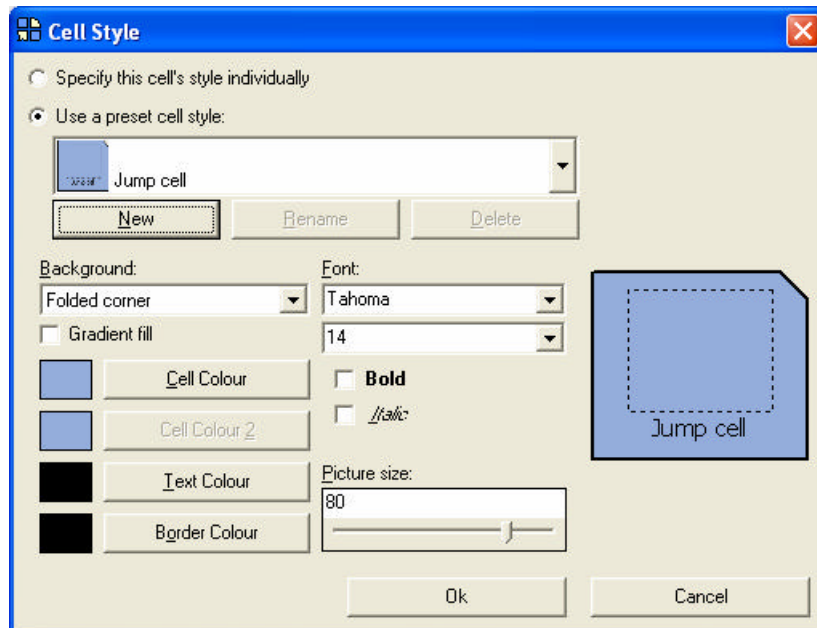
PRESET STYLES

There are many times that you will want to have more than one cell looking the same. In The Grid 2, this is best achieved with **preset styles**.

There are a few preset styles that are always present for every user, such as "jump cell" and "vocab cell". In addition to this, you can create your own preset styles.

For example, you may wish to create a preset style called "family" that you use for vocab cells with "mum", "dad", "brother" and "sister" on them.

Once you have created a preset style, you can use it for any cell in any grid for that user.

The real advantage of preset styles comes in when you want to make a change to the style. By changing the preset style (e.g. making the font larger), all cells that use the preset style are updated.

INDIVIDUAL STYLES

Occasionally, you will have a situation where you have just one or two cells that you want to set the style for. In this case, you can specify an **individual style** for the cell. This allows you to set the style for the cell without affecting any other cells.

5.11.   Grid settings

To access settings that apply to a grid, such as changing the background colour and making a grid self closing, select **Edit Grid Settings** from the left hand side of the edit window.

Note: You must be in edit mode to access Grid Settings.
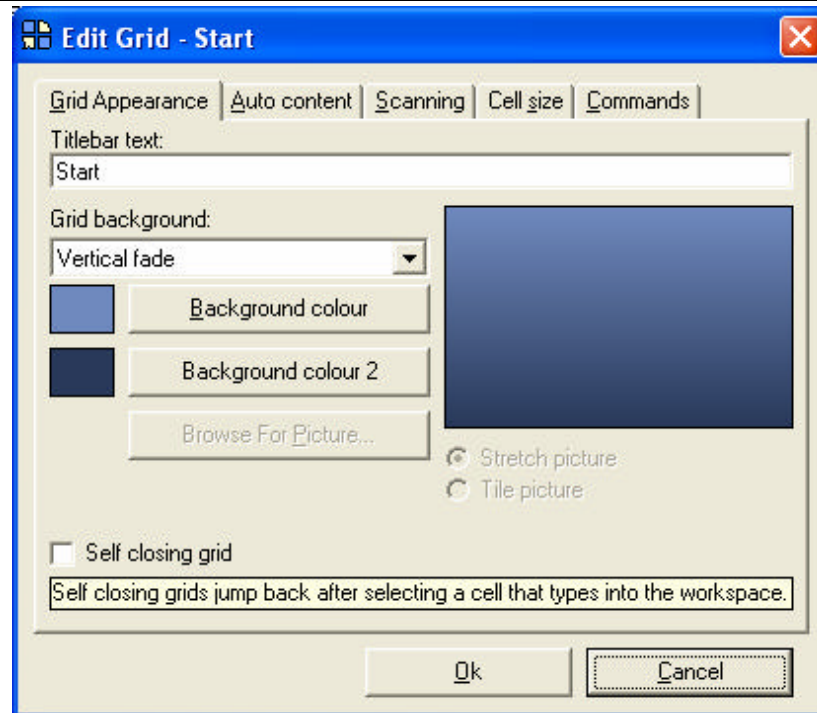
TITLEBAR TEXT

The titlebar normally displays the name of the grid, but you can write any text to be displayed in the titlebar of a grid.

The colours and text font for the titlebar can be configured in User Settings. You can also opt to hide the titlebar, so if it is not visible then open user settings and choose the option to display the titlebar.

GRID BACKGROUND

Grid backgrounds can help users to identify which grid they are on. For example, you could choose to have the home page with a blue background and other pages with a green background.

You can select to have the background as a single (solid) colour, a fade between two colours or an image.

If you select a solid colour or a fade, the colour(s) can be selected using the two buttons provided.

If you use an image you can select to stretch the picture or tile the picture. Stretch picture will resize the image to fill the screen, and tile picture will repeat the image across the screen.

SELF CLOSING GRID

Self closing grids jump back when the user has selected a cell from the grid. To make a grid self close, tick the **self closing grid** box.

You can read more about self closing grids in chapter 6.

AUTO CONTENT

Grids that have prediction auto content cells will normally suggest words from the prediction dictionary, but you can make a grid that prioritises other words.
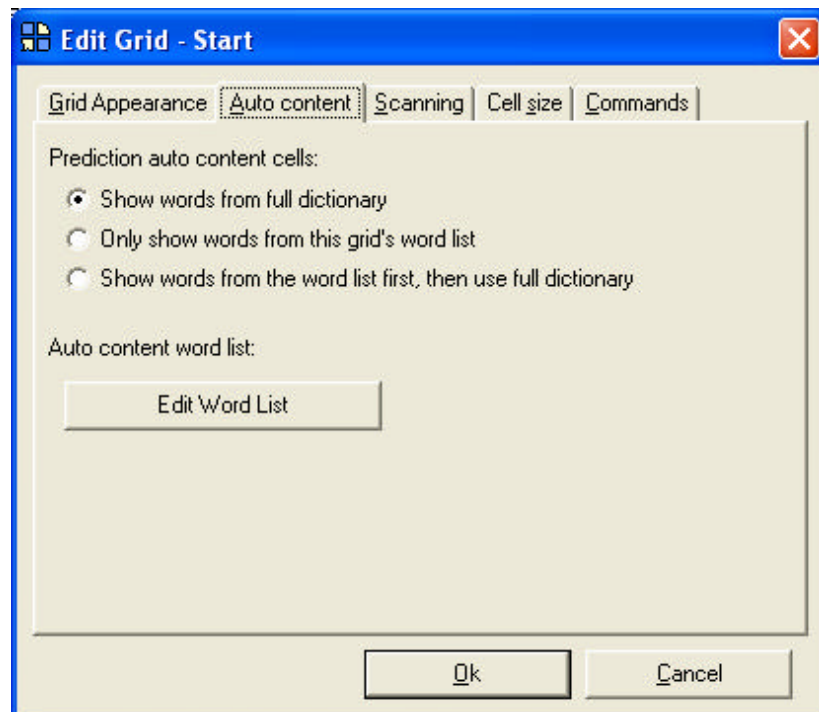
This allows you to create a grid that emphasises words on a particular topic. Add the topic words to the Word List for the grid, and then select the appropriate option.

Show words from full dictionary will use the complete dictionary of words that have been learnt from the user.

Only show words from this grid's word list will only predict words that you have added to the word list, and not include any words from the full prediction dictionary.

Show words from the word list first, then use full dictionary will suggest all the available matches from the word list. If there are auto content cells with prediction, remaining then these will be populated from the full prediction dictionary.

BLOCK SCANNING

One of the options that can help switch users to access large grids more quickly is **block scanning**. This divides the grid into blocks of cells to reduce the selection set quickly.
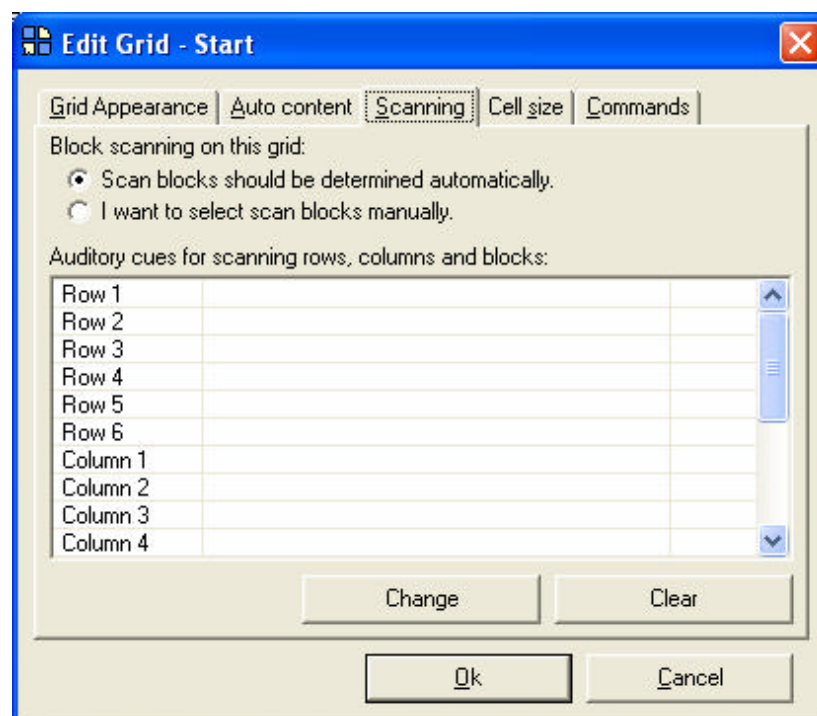
The groups of cells that are highlighted together are called **scan blocks**. Normally, The Grid 2 will automatically determine if scan blocks are required and where they should lie. For some grids you may wish to specify where the scan blocks lie. If you select the

option **I want to select scan blocks manually** then you can arrange the scan blocks when in edit mode.

AUDITORY CUES FOR SCANNING ROWS, COLUMNS AND BLOCKS

When using auditory scanning, the description of each cell is spoken when it is highlighted to allow the user to identify the cell that they want.

When scanning a group of cells in a row, column or block then the description of the first cell in the group is used. This is not always appropriate, and so you can manually determine the auditory scanning description for each group.

> *For example, you might configure the rows in the grid pictured to have the auditory scanning cues "a to d", "e to h", "i to n", etc.*

To change the description for a group of cells, select the item in the list and click on **Change**. If you clear an entry then the description of the first cell in the group will be used.

CELL SIZE

When using the Computer Control workspace, grids are displayed in a corner of the screen to allow other Windows programs to be seen. The height of the cells is configured in User Settings, and this is the same for all grids.
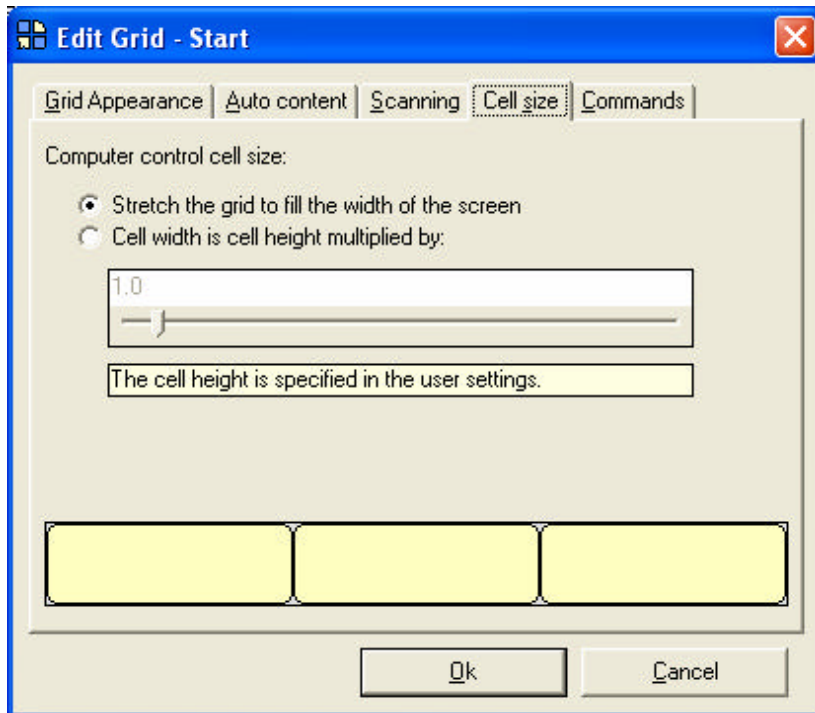
The width of the cells can be different for each grid. For most grids you will probably want to fill the width of the screen, but for some grids you may choose to have a smaller grid to allow more of the screen to be seen.

If you select the **Cell height multiplied by** option you can specify the aspect ratio of the cells.

COMMANDS

You can specify commands to be activated every time the grid is opened. This can be used in different ways, for example a music player grid might have the "Music Player Workspace" command in the grid's command list.
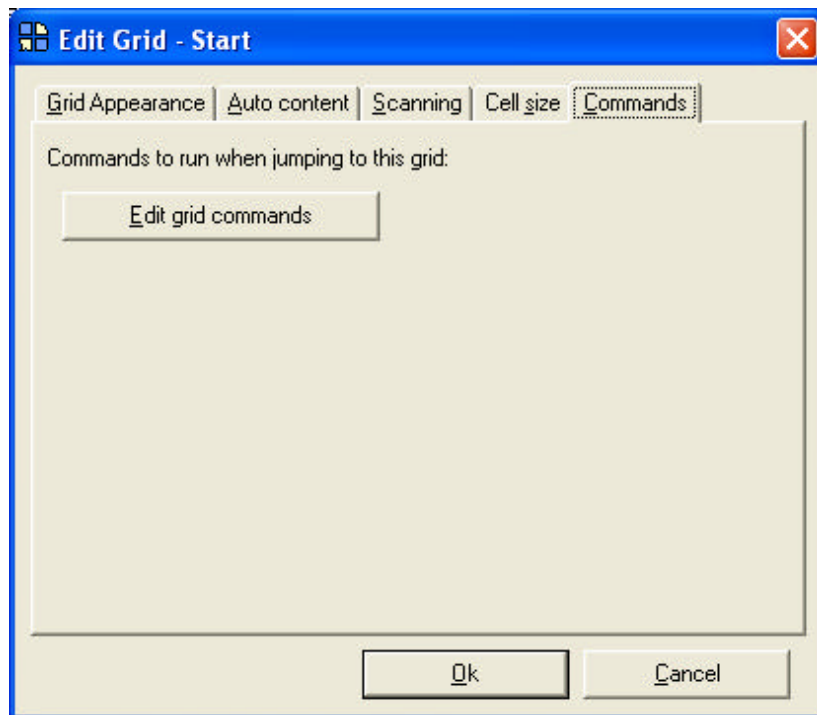
To change the command list, select **Edit Grid Commands** from the Commands tab.

6. Smart ways to jump

6.1. Self closing (pop-up) grids

A handy feature in The Grid 2 allows you to create a grid that will **jump back** when a cell is selected. In our formal jargon these are called **self closing** grids, but they are often called pop-ups because they perform a similar function to pop-up grids in other AAC software.

The primary motive for creating self closing grids is to reduce the number of selections that the user needs to make – particularly valuable for users for whom each selection is time consuming or difficult.

Self closing grids are primarily used when there is a mutually exclusive set of options – for example you might use it for a page with a choice of colours.

MAKING A GRID SELF CLOSING

To make a grid self closing, go into **edit mode**, click on **grid settings** and then tick the box marked **self closing grid**.

EXEMPTIONS

Certain cells are exempt from self closing. These are cells that you might select without closing the grid, for example, you wouldn't want a **jump** cell to self close a grid.

The **more auto content** command also makes a cell exempt from self closing, because you would not want to display more words and then immediately close the grid.

STAY ON GRID

There is a command that you can add to a self closing grid to allow the user to stay on the grid if they wish to. The **Stay on grid** command has a 'pin' image, and once selected the user can make as many selections as they wish before jumping to a different grid.

6.2. Bookmarks

Bookmarks are another useful feature when jumping. You can store a bookmark at any time by using the **Bookmark** command. This places a marker on the current grid, and next time a cell jumps back you will return to that grid.

This is really useful if there are sub-categories that have to be navigated in order to find the word that is wanted.

Without bookmarks:
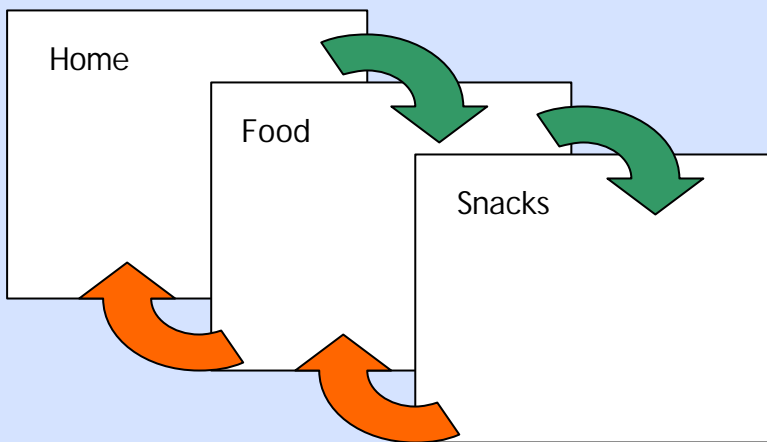
Home

Food

Snacks

With normal jumps, the user would have to jump back through each grid to get to the start. In the example above, the user goes from Home to Food to Snacks and selects the word that they want (green arrows). They then need to jump back twice to get back to the start (orange arrows).

With bookmarks:

Home

Food
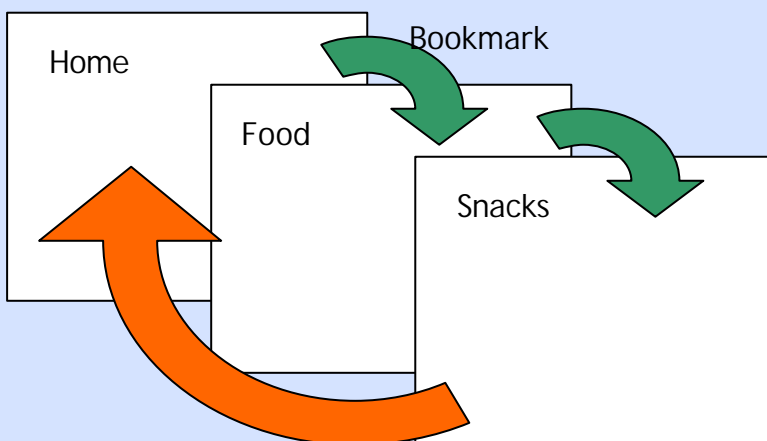
Bookmark

Snacks

This time, the first grid was bookmarked before jumping. As a result, when the user jumped back from the Snacks page, they landed right back at the (bookmarked) Home page.

To place a bookmark when jumping, add the **bookmark** command to the command list of the cell that jumps.
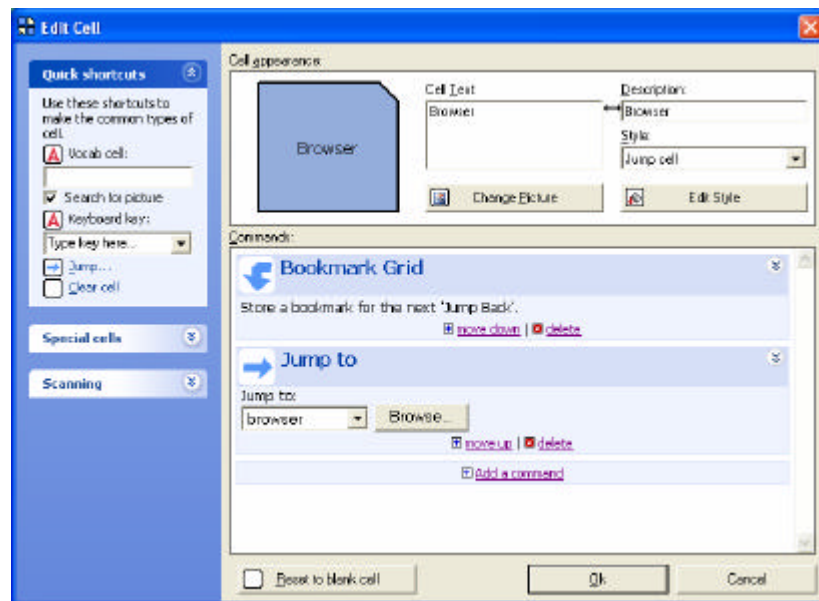
*Note that the bookmark command should be **before** the jump command because it bookmarks the current grid. If the bookmark command were to appear after the jump command then it would bookmark the grid that you are jumping to!*

You cannot have more than one bookmark, so if you have a bookmark placed and a cell creates a new bookmark then the first bookmark is lost.

BOOKMARKS WITH SELF CLOSING GRIDS

If you're feeling clever, you can combine self closing grids with bookmarks. In the above example, if the Snacks page were self closing then as soon as the user selected their snack, they would be back at the Home page.

7.   Making a keyboard grid

There are a number of keyboard grids available with different layouts, including qwerty, alphabetical, frequency-of-use and auditory scanning. You will often be able to use one of the existing grids rather than starting from scratch, but it is still useful to know how to create cells that act as keyboard keys.

To create a keyboard key, select a blank cell and open the Edit Cell window. Just below the vocab cell quick shortcut is another space to enter a **Keyboard key**. Type the key that you want to be typed in here. For special keys such as Enter, you can drop down the list and select them.
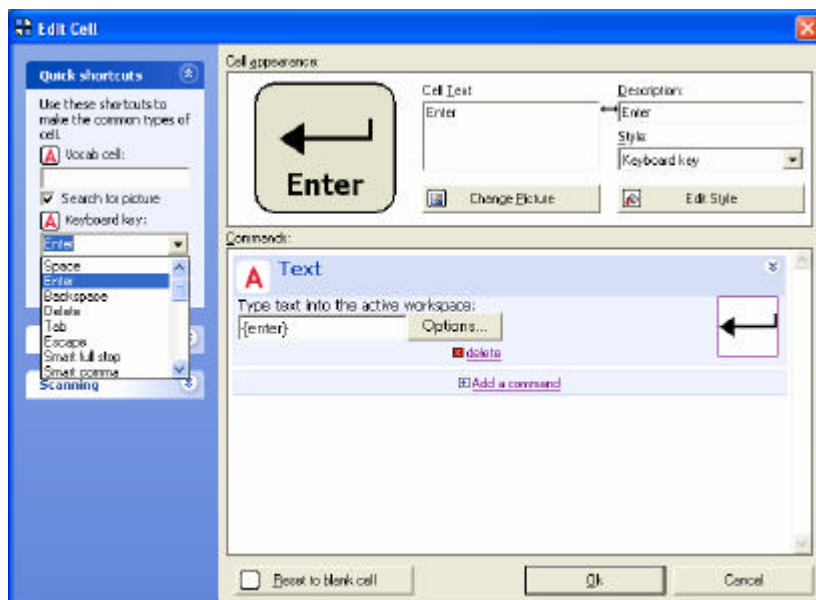
Creating a keyboard key in this way is very similar to creating a quick vocab cell, but there are a few differences:

- Keyboard keys do not have a picture

- The 'keyboard key' style is selected

- No space is added to the text command

8. Commands

Each cell in The Grid 2 will perform one or more actions when it is selected. The actions that a cell performs are determined by the **commands** for that cell.

To see the commands for a cell, open the Edit Cell window.
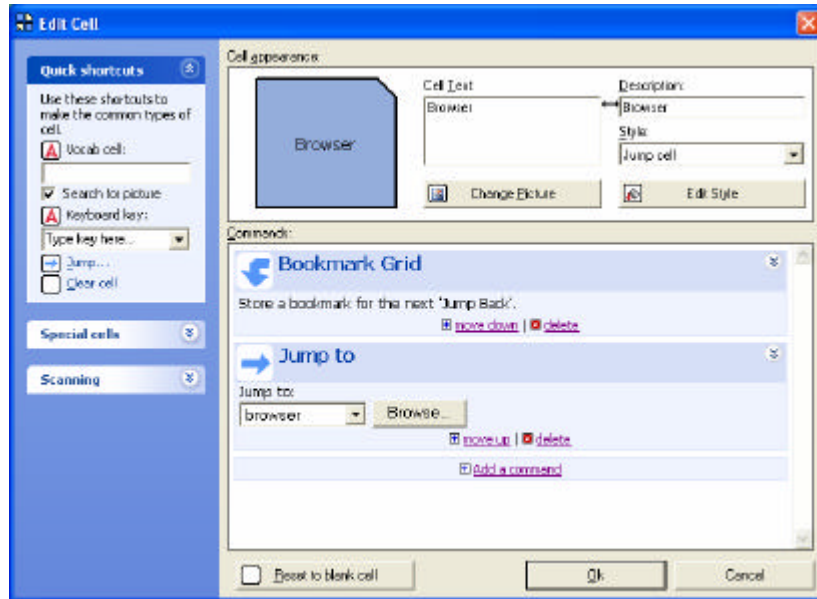
If you have several commands, they can be 'collapsed' to allow you to get an overview of the commands for a cell. To expand or collapse an individual command, click on the double arrows in the top right corner of that command.

ADDING A COMMAND TO A CELL

If you want a cell to perform a function in The Grid 2, you add the corresponding command to the cell. For example, to make a cell speak the sentence, you add a speak command.

To add a command:

1. Press **F11** to enter edit mode.

2. **Double click** on the cell you want to edit.

3. Click on the **add command** label at the bottom of the command list.
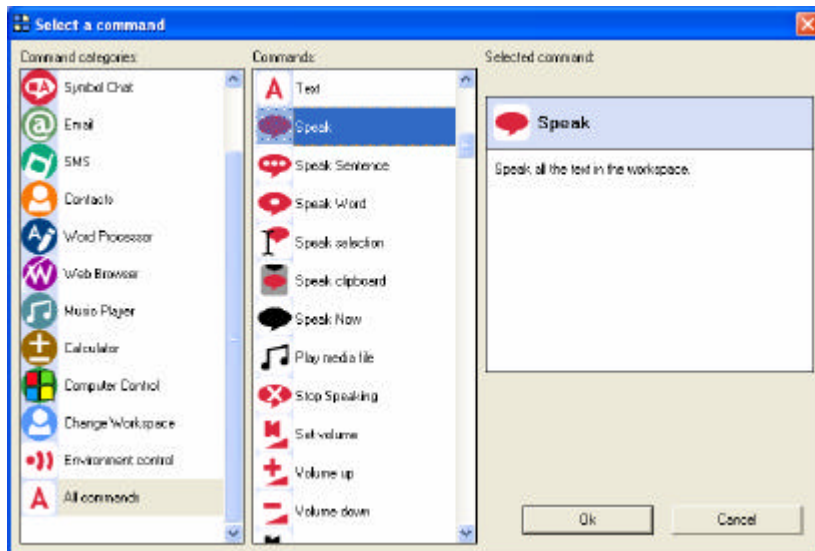
4. Select the **command category** from the list on the left. Commands are grouped according to how they are used.

5. Select the command from the list in the middle. A description of the command will be shown on the right to help you select the correct command.

6. Click **Ok** to add the command to the cell.

REARRANGING THE COMMANDS

You can select the order in which commands appear. Commands are processed from the top of the list to the bottom.

To move a command up or down in the list, click on the **up** or **down** label at the bottom of the command.

DELETING A COMMAND

To remove a command from a cell, click on the **delete** label at the bottom of the command.

AUTOMATICALLY SELECTED COMMANDS

When you make a cell using the quick shortcuts (such as vocab cells, jump cells or really useful cells) the commands are selected for you.

8.1. Some commands in detail

We'll take a closer look at some of the important commands in closer detail.

The most often used command is the text command. The text command writes into the current workspace, if possible. For text-based workspaces (including text chat, text chat + messages, email, SMS and word processor) the words appear at the cursor as if they were typed with a keyboard.

For the symbol workspaces (symbol chat and simple symbol chat, a picture also appears above the word. This is normally the same picture that is displayed in the cell, but you can specify a different picture if you wish.
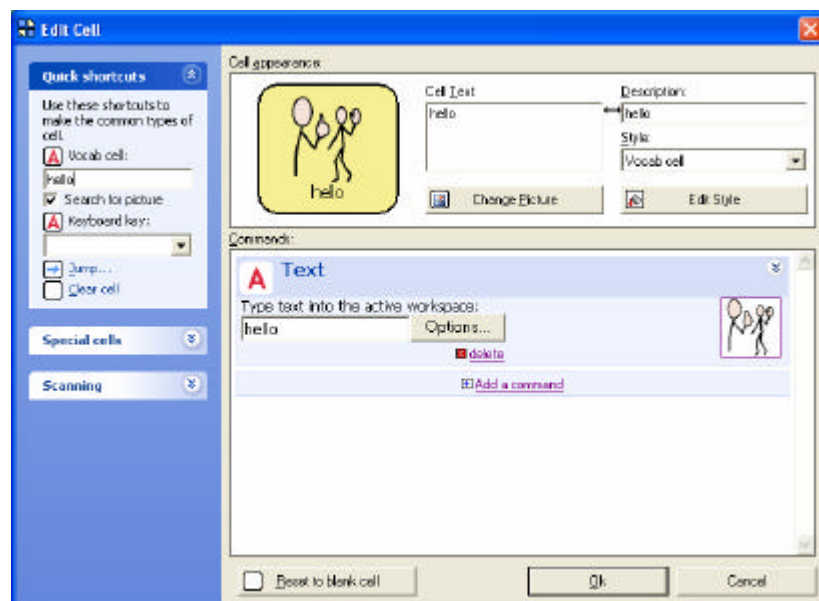
The Text command is added for you when creating a vocab cell or a keyboard key.

Note that when you make a vocab cell, a space is automatically added to your text. If you edit a text command manually, you will usually want to ensure there is a space to the end of the text.

You can specify a media file (sound or video) to play when the cell is selected, allowing you to use recorded speech or videos in sentences.

There are some codes that can be inserted in the text command to type keys that cannot normally be pressed:

- {ENTER}   Enter key

- {BACKSPACE}   Backspace key

- {SPACE}   Space bar

A complete list of codes can be found in the appendix at the end of this book.

> *Your user settings determine whether the text command speaks when selected. You can choose to speak each letter, word or sentence typed.*

SPEAK COMMANDS
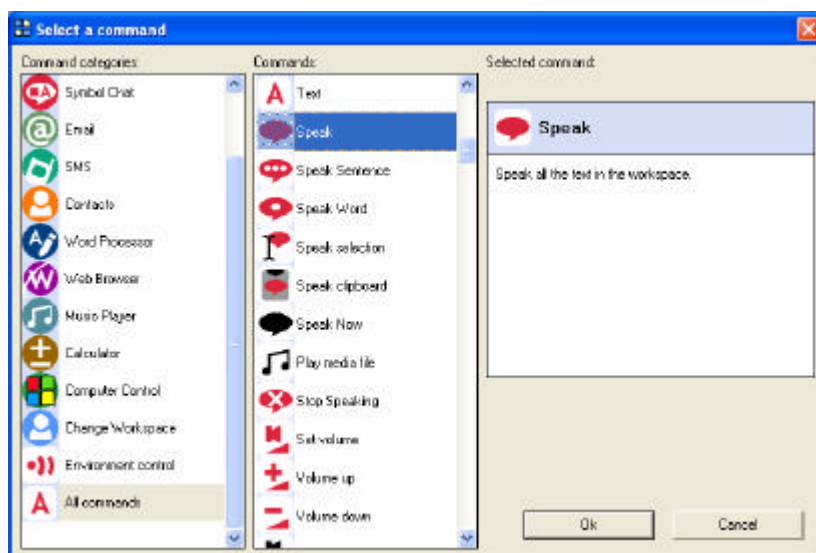
The **Speak** command will read aloud from the current workspace. This allows you to construct a sentence and then read the complete sentence aloud.

The **Speak now** command speaks some text aloud without involving the workspace. This is useful if you want to speak a complete message instantly, such as "I need the toilet!"

Speak sentence is used when writing longer text (such as an email or in the word processor workspace) and will only read the current sentence. It is also used in the text chat + messages workspace to read the selected message.

Speak word will speak the word at the cursor. This can be used effectively for people with difficulty reading.

Stop speaking will stop any speech in progress.
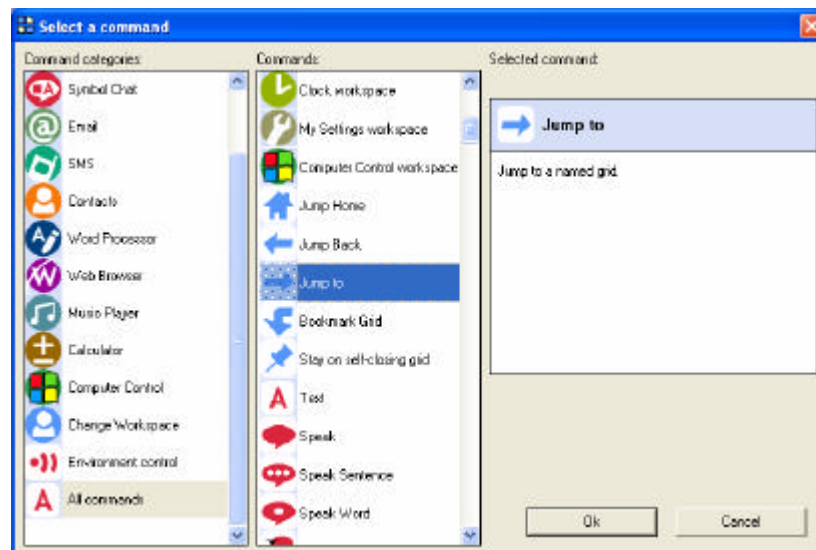
The **Jump home** command jumps to the home grid – this is the first grid displayed when the user is opened. You can change the home grid in Grid Explorer.

Jump back returns to the previous grid visited.

*Grids that are **self closing** jump back automatically when you select a cell on that grid.*

The **Jump to** command jumps to a named grid.

The **Bookmark grid** command stores a bookmark for the current grid. Next time a cell jumps back (or self closes) you will be taken back to the bookmarked grid, even if it was not the previous grid.

Note: You should place the bookmark command before the jump command to bookmark a grid when jumping to a different grid.

The **Stay on self closing grid** command allows the user to over-ride this behaviour and select more than one cell from a self closing grid.

8.2. Commands for users and grids

You can specify commands to be actioned when a user or a grid is opened.

To specify commands for a user, select **Edit > User Settings** from the menu, and then select the **General settings > Startup** page. Click on the button **Edit user's startup commands** to change the commands.
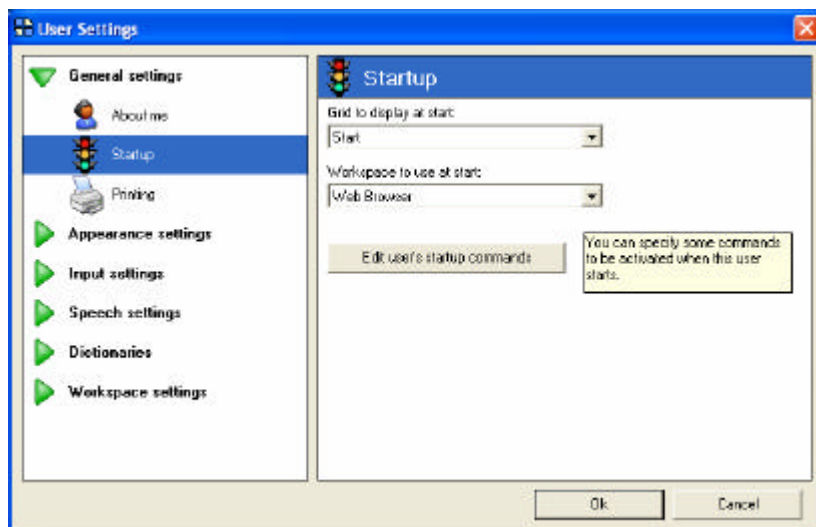
These commands are activated when the user is loaded. One example for using this feature is to say "welcome" when the program has loaded, to let the user know that it is ready for them to start.

To specify commands for a grid, select **Edit Grid Settings** and then chose the **Commands** tab. The button **Edit grid commands** allows you to edit the commands for this grid.
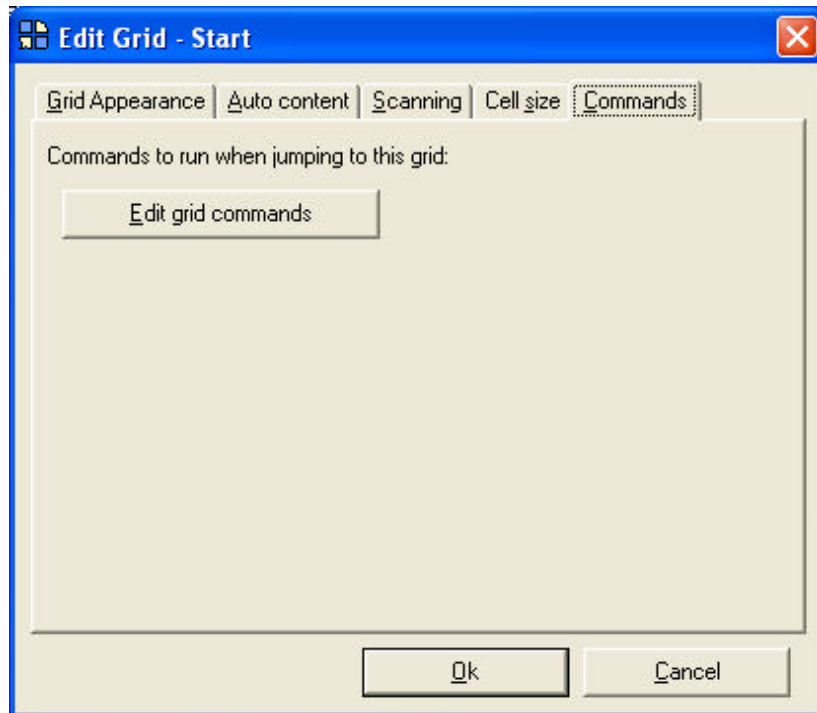
Grid commands are executed when the user jumps to the grid.

One example for use of this is a music player grid, with a command to switch to the music player workspace each time the grid is opened.

Note that the commands for a grid are executed immediately after the jump to the grid. If the cell that initiated the jump has further commands on it, these will be executed after the grid's startup commands.

9.   Auto content

The Grid 2 uses **auto content** to allow you to populate cells dynamically. What this means is that the cells are selected and arranged automatically. There are a few different types of auto content that can be used on a grid.
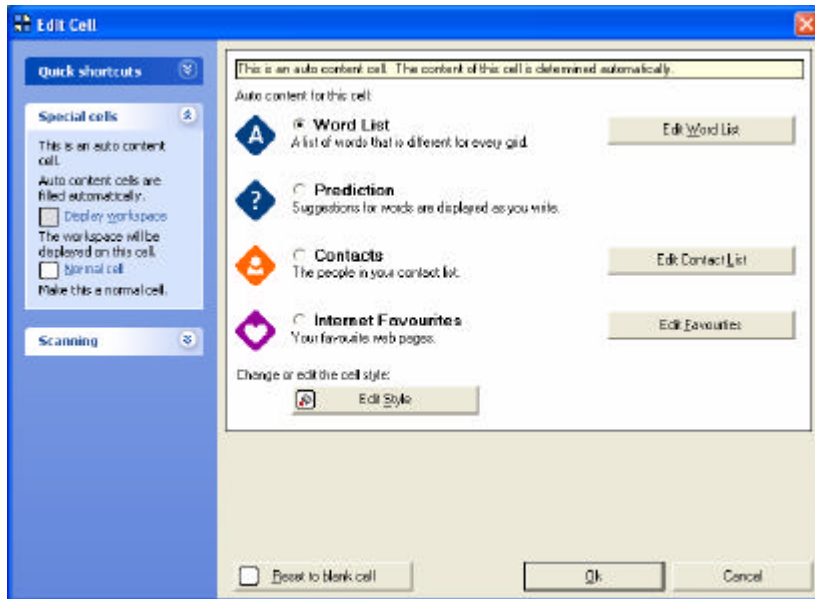
Word list auto content displays a list of vocabulary.

Prediction auto content suggests words as you write.

Contacts auto content displays contacts for sending email and SMS messages to.

Web favourites auto content displays web pages that the user has stored as favourites.

9.1. Creating auto content cells

To use auto content on a grid, you need to select one or more cells and allocate them for auto content.

Open the grid that you want to edit, and go into **edit mode**. Click on the cell that you want to use for auto content to select it.

Tip: you can hold control and drag the mouse to select a group of cells.

Now select **Auto content cell** from the cell options on the left, and choose the type of auto content that you wish to use.

> *Note: this option is only available for blank cells. If the cell has some other stuff in it, you need to clear it first.*

You can also choose **Edit cell** (or double click on a cell) and then select **Special cells** on the left to create an auto content cell.

9.2. Word lists

Word lists are used to provide access to a number of words on a grid. Each grid has its own word list, and the words from this list are displayed in the auto content cells.
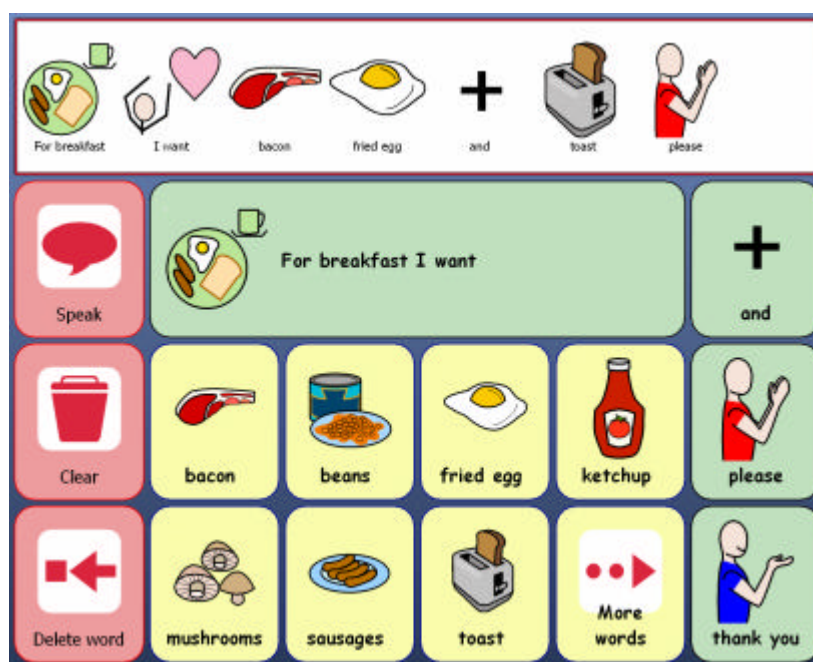
WHY WOULD I WANT TO USE A WORD LIST?

Word lists provide the same effect as creating a grid full of vocab cells, but there are a few advantages to using word list auto content.

First of all, the list is automatically arranged. This means that if you come back to the grid later and want to put another word in the middle of the grid, you don't

need to shuffle all the other cells along. You can add, remove or change the order of words in the list, and they will be arranged on the grid for you.

The next advantage is that word lists allow you to have a long list of vocabulary without having to make multiple grids. If there are more words in the word list than there are available auto content cells, you can create a 'more' button that will show the next bunch of words from the word list.

EDITING THE WORD LIST

To edit the word list for a grid, select **Edit word list**. In edit mode, this appears on the left under **Grid Options**, and when you're not editing you can find it in the menu under **Auto Content > Word list for this grid**.

> *Note that the words will not show up in the cells when you are in edit mode. The cells will display "word list 1", "word list 2", etc. Once you stop editing, the words will be displayed in the cells.*

The box on the left displays words that are currently in the word list. Select **Add a New Word** (or hit **enter**) and type a word to add it to the list. You can also enter

a longer phrase or sentence if you wish. The picture will be located automatically and you can select a different picture if you want.

If you select a word in the list, you can change some options for the word. Edit the spelling of the word in the box provided, or click the buttons to change the picture or move it up or down in the list. You can also remove a word from the list here.

SAVING A WORD LIST

Sometimes you may wish to save a word list to use on anther grid, or send to a friend. To do this, select **File > Export Word List** from the menu. The word list and any pictures you have selected will be saved in a single file.

If you want to load a word list from a saved file, select **File > Import Word List**.

You can also load words from a text file by selecting **File > Add Words From Text File**. This takes each line of the file and makes it a separate entry in the word list.

Note: you can load word banks from The Grid 1 by using ***Add Words From Text File****.*

WORD LIST TOOLS

The **Tools** menu provides a few handy tools to make it easier to manage a word list. **Sort alphabetically** will put the words in order for you, whilst **Find Pictures** will look for a picture for all words that do not have a picture.

When the words are selected and written into the workspace, they should have a space after them (otherwise the next word selected will be merged with it). **Add space after words** ensures that every word has a space at the end.

To keep the word list tidy, you can **Remove duplicate words**. **Remove words without a picture** can be quite

handy if you have imported a word list for a user who needs symbol support.

Finally **Clear word list** provides a quick way to remove all the words and start again.

9.3. Prediction

Prediction offers suggestions for words as you type. For example, if you type "hel" the prediction might suggest "hello" or "helicopter".

LEARNING FROM YOU

The words suggested by prediction change as you use The Grid 2 because it learns which words you use and how often you use them.

NEXT WORD PREDICTION

After you type a word, the prediction system will try to guess which word you will write next. This is based upon previous typing, so you will find that the more you write, the more the suggestions suit your writing style.

PREDICTION SETTINGS

You can turn on or off some features related to prediction in the user settings. Select **Edit > User settings** from the menu, then locate the **Dictionaries > Prediction** page.

You can set a **minimum length for suggestions**, for users who can quickly and confidently type short words.

You can also choose to **show pictures in prediction cells**, which will select the best picture from your selected symbol library to accompany each word. For users who rely on symbols, you can eliminate words that do not have a picture.

If a user's access is slow and they are reading every word that is offered in prediction cells, you could select **remove words already suggested from prediction**. If a word is suggested but you do not select it, it will not be

listed after typing another letter *even if it still matches.* For example, if you type "t" and "the" is suggested, and you then type "th" then "the" would not be suggested to leave room for other words starting with "th".

The option to **learn new words and word usage** is normally switched on. If you turn it off then The Grid 2 will not learn which words you use or how often you use them, so it will not be able to improve prediction in response to the way you write.

Spell check words before learning is a useful way to prevent nonsense from going into the prediction dictionary. Each time you type a word, it is remembered so it can be suggested in future. Typos and misspellings would be included if the spell checker was switched off.

ADDING OR REMOVING WORDS FROM PREDICTION

If the prediction suggests a word that you don't like, or a word that you think should be suggested is missing, you can improve the prediction in response to this. Select **Auto content > Prediction** from the menu. You can then enter words to be suggested or removed as required. Each word should be separated by a space or a new line (enter key).

PREDICTING FROM A WORD LIST

You can seed the prediction for a particular grid to use words from a word list. Press **F11** to enter Edit Mode, and then select **Edit grid settings**. Now select the **Auto content** tab and you can select the source of the prediction:

- **Show words from full dictionary**: this is normal prediction using the full dictionary of words that is updated as you write.

- **Only show words from this grid's word list**: the prediction dictionary is not used, but words from

the grid's word list are suggested if they match the typing of the word so far.

- **Show words from the word list, and then use the full dictionary**: any matches from the word list are identified and displayed, and then if there are prediction cells remaining these will be populated from the full dictionary.

SOUNDS-LIKE AND SPELLED-LIKE PREDICTION

You can use prediction cells to offer spelling suggestions to users after they have typed a word. There are two different ways to do this:

- **Sounds-like** will suggest words with similar phonetics to the word that has been typed.

- **Spelled-like** will suggest words with similar spelling to the word that has been typed.

To use these types of prediction, you need to select the Sounds-like or Spelled-like commands. See section 8 for information on adding a command to a cell.

PREDICT THIS

You can also make a cell that will put the words that you want into prediction cells. For example, you might have a button for labelled 'people' that would suggest "I, me, you, he, she, ...".

There are two versions of the command for predict this. The simple version simply has 10 slots for words and a simple yes/no option for finding pictures to go with the words.
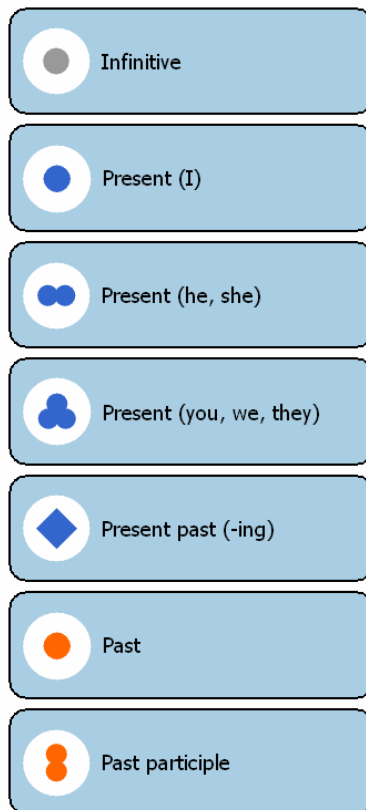
The word list version allows you to create a word list that is then put into the prediction cells. It's a bit more complex, but the payoff is that you get to select your picture for each word plus you can have more than 10 words and rearrange the list with ease.

Verb morphology uses The Grid 2′s built in verb database to change the form of a verb.

*Note that you can use verb morphology without prediction with the regular **Verb Morphology** command.*

The **Verb morphology in prediction** command lists 7 forms of a verb.

⬤	Infinitive
🔵	Present (I)
🔵🔵	Present (he, she)
♣	Present (you, we, they)
◆	Present past (-ing)
🟠	Past
🟠	Past participle

You can change the pictures that are displayed in **User settings,** in the **Dictionaries > Verb morphology** page. You can also tick an option to prevent the same form of a verb appearing twice (for most regular verbs there is a lot of repetition between the different forms of a verb).

9.4. Contacts

Contacts will display the people in the user′s contacts list in auto content cells. These people can be selected to receive an email or SMS using The Grid 2′s built in email and SMS workspaces.

EDITING CONTACTS

You can edit the list of contacts by selecting **Auto content > Contacts** from the menu.

You can also enable user-editing of contacts via the **Contacts workspace**. There are some commands associated with this workspace that allow the user to add, remove or edit their contacts.

9.5. Web favourites

The **Web favourites** auto cells allow the user to store web pages that they like so they can go back to them easily later.

EDITING FAVOURITES

You can edit the list of favourite web pages by selecting **Auto content > Favourites** from the menu.

There is a command for adding the current web page to the list of favourites.

10. Computer control grids

The computer control workspace is different to the other workspaces because when it is active your grids are not displayed full screen.

The grids are reduced in size to allow other Windows programs to be seen. When you select a cell with a Text command, the text is typed into other windows programs.

10.1.   On screen keyboards

You can create on screen keyboards for typing into other Windows programs very easily. It is easy to rearrange the keyboard, and extra cells can be added with extra functions.

MORE THAN JUST A KEYBOARD

On screen keyboards can be used for more than replicating a physical keyboard on the computer screen. Cells can be used for mouse control, switch between programs and other tasks.

You can also create 'macro' cells – cells that use several commands to perform a number of tasks.

MOUSE CONTROL

There are a number of commands to enable switch users to control the mouse. You can move the mouse pointer, click the buttons and also drag things around. One popular command is the radar mouse for moving the mouse pointer around.

ALTERNATIVES TO MOUSE CONTROL

Whilst it is possible to move the mouse pointer and click the buttons using commands, this is rarely the most efficient way to use switches. Most functions in Windows programs have keyboard shortcuts. For example, to create a new document in most programs you use the shortcut **Control-N** or access the menu with

Alt-F-N. These can be done using a single cell in The Grid 2, saving a lot of time. To do this, simple use a text command to type the appropriate keys.
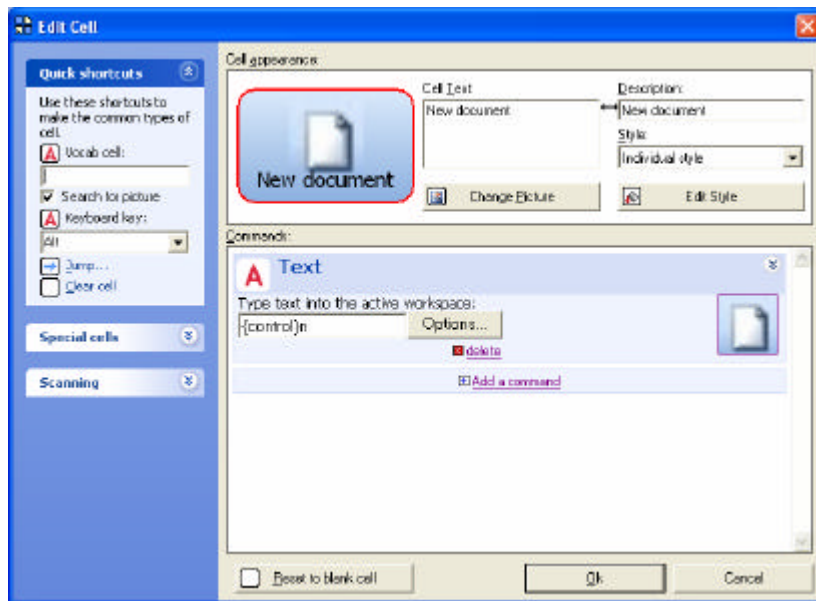
To make it easier to use, you can also **Change picture** and **Capture** the icon from the toolbar of the program the grid controls.

11. User settings

Each user's settings can be carefully configured to suit individual needs.

To open the user settings from the Grid Player, select **Edit > User Settings** from the menu.

To open the user settings from Grid Explorer, select a user and then choose **User Settings**.

The user settings are divided into sections.

11.1. General settings

ABOUT ME
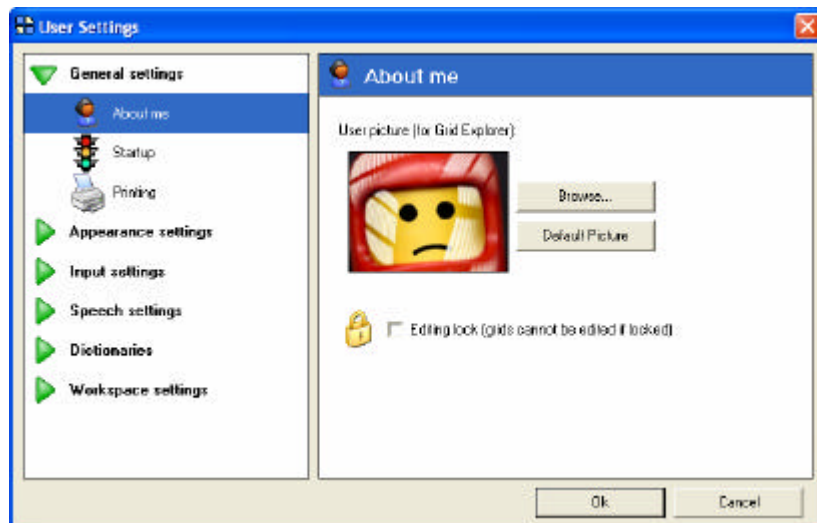
You can browse for a different picture to display in Grid Explorer (such as a photograph of a user) to make it easier to differentiate users.

The **Editing lock** is used to prevent access the Edit Mode from the F11 key or the menu. This can be useful if there are users who have a tendency to meddle with the computer!

STARTUP
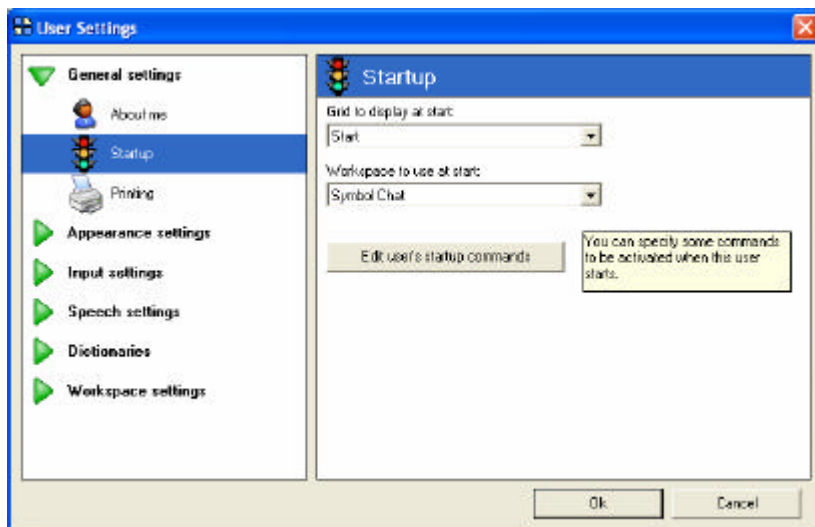
The grid displayed at the start is not only the first grid seen when this user is loaded, but also the destination for all cells that jump home.

You can also specify which workspace should be active when the user is loaded. Often this will be a communication workspace (i.e. Symbol Chat or Text Chat). This is also the workspace that is selected when a cell has the "Change to default workspace" command.

PRINTING
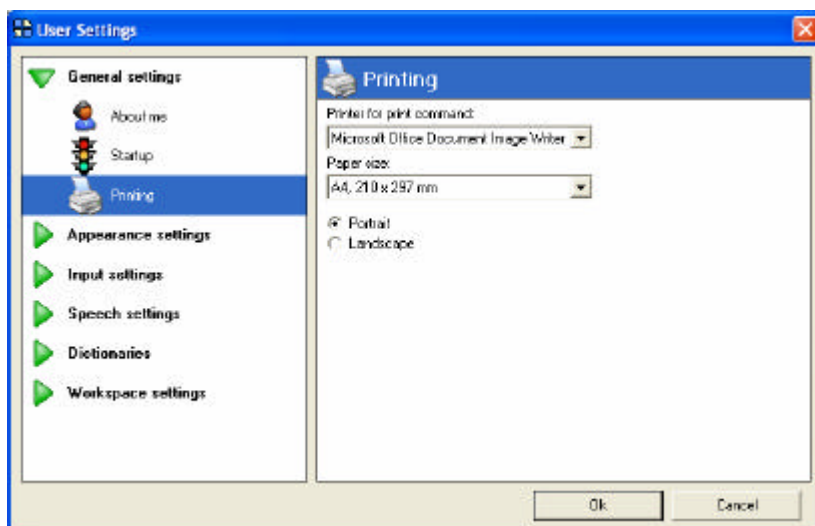
This page allows you to set up the printer for when the user selects a Print cell on one of their grids. You can select which printer to use, what paper size to print to and also the paper orientation.

11.2.   Appearance settings

CELL APPEARANCE
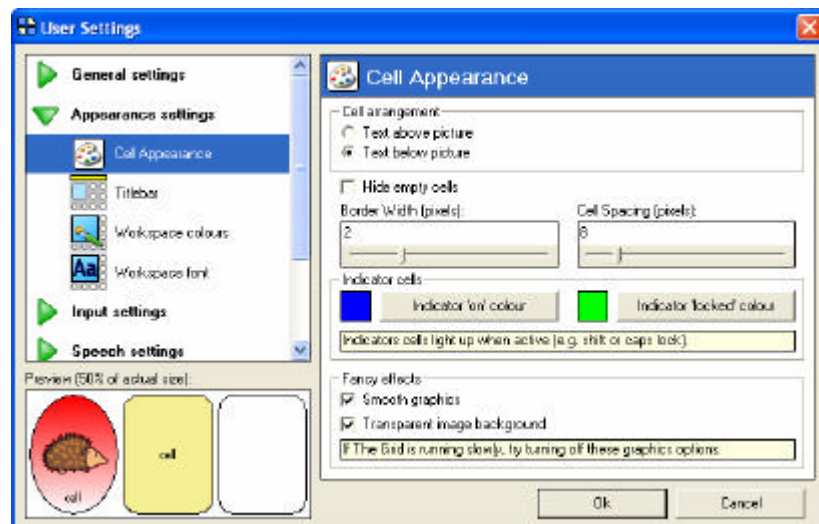
These settings affect the appearance of every grid.

You can select to have the text above or below the picture in a cell. Some users find it easier to have the text below, whilst touch screen users may prefer to have the text above so it is still visible when selecting cells.

Hide empty cells will remove cells from the grid that do not have any content in them. This is really useful if you want to focus the user's attention on the important cells that do stuff. On the other hand, when learning scanning it can be useful to see every cell so that the scanning patterns can be predicted more easily.

Border width is the thickness of the line around each cell.

Cell spacing can be adjusted to give the cells more room to 'breathe'. A larger cells spacing also makes it easier for touch screen users to make accurate

selections, and increases the visibility of the highlight around each cell. However, it also makes the cells smaller, reducing the picture size and the space available for the text.

Indicator cells are used to let the user know if the certain cells are 'turned on'. For example, a shift key will change colour to indicate that shift is on, and change colour again when it is locked. You can set those colours here.

Fancy effects make the grids look nicer. If you are having problems with the speed that the program runs (particularly if pages with many symbols are slow to load) then you can try turning these options off and see if it helps.

TITLEBAR
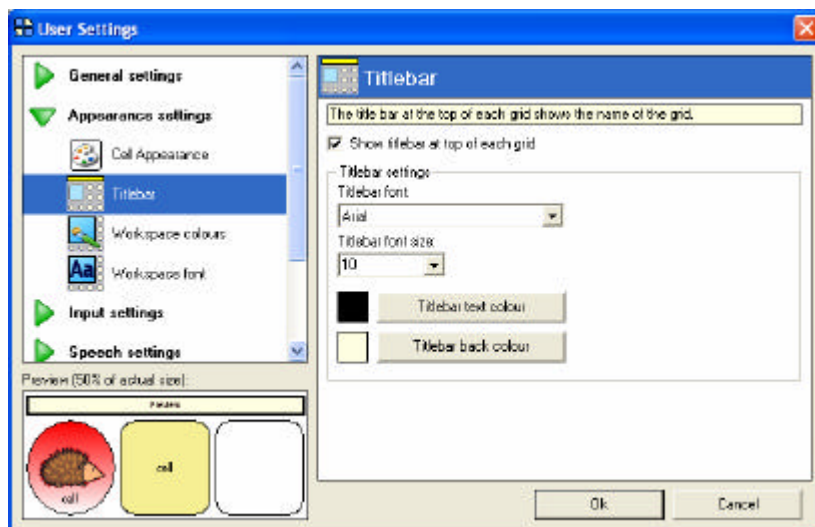
You can display a titlebar above each grid. Normally this will display the name of the grid, but it can also be configured to display other information, such as a question or a more detailed title for the grid.

If you display the titlebar, you can configure the font and colours used.
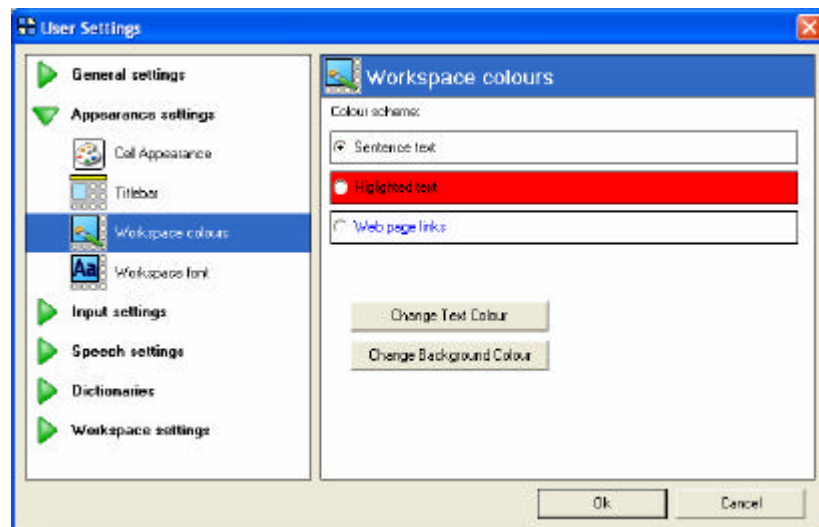
Here you can change the colours that are used for the text in the workspaces.

Sentence text is the text colour and background colour for writing, and sets the basic colours for all the workspaces.

Highlighted text colours are used when highlighting words in time with the speech. If you do not wish to have text highlighted as it is read, set these colours to the same as the sentence text.

Web page links can be a different colour so that the user can clearly see which text is a link on a webpage.

WORKSPACE FONT

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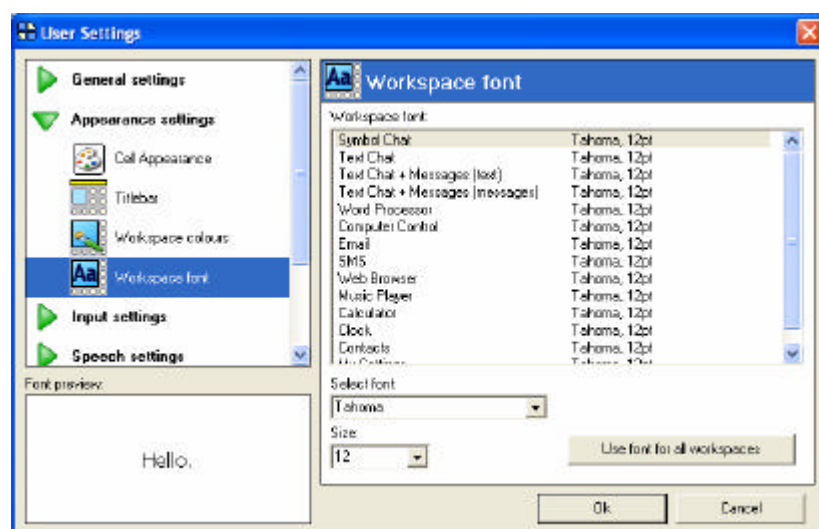
You can specify a different font and size for each workspace.

11.3. Input settings
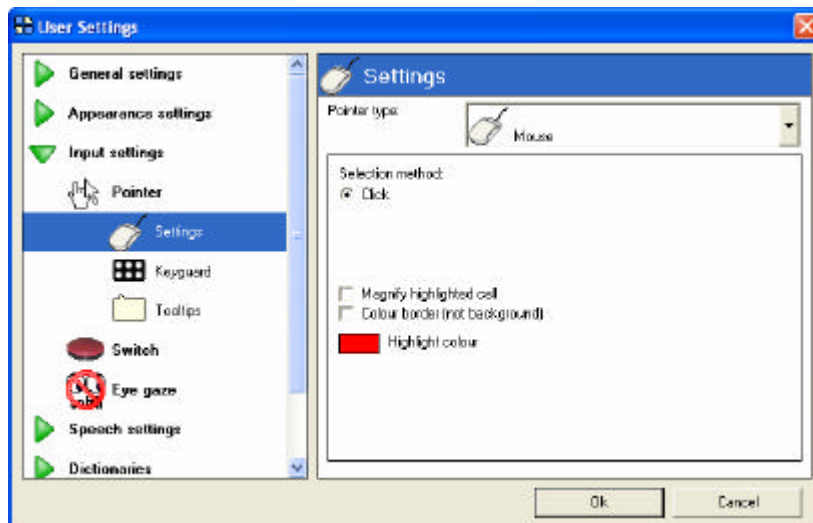
Input settings cover all the options available for input with **pointers** (including mouse, touch screen and headpointer) s**witches**, and **eye-gaze**. Input settings are discussed in more detail in sections 12-14.

11.4. Speech settings
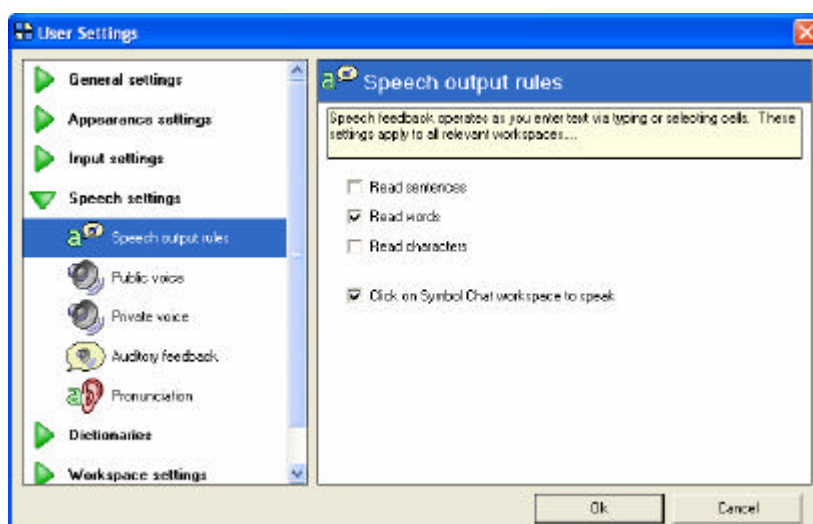
When you write into workspaces, they can speak the text as you write. Here you can select when the text

should be spoken – after completing a sentence, a word or a character.

You can also select to speak the Symbol Chat workspace by clicking in it.

PUBLIC VOICE
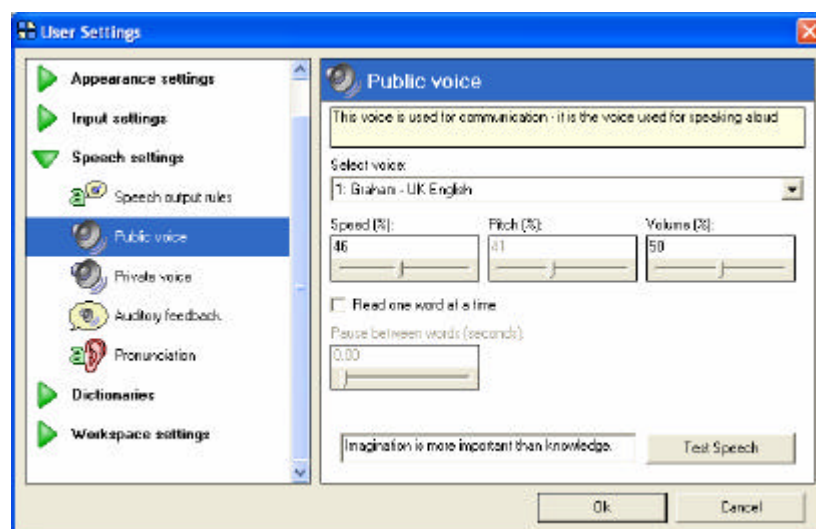
The public voice is used to speak for communication.

Select the voice from the list. Many voices allow you to vary the speed and pitch, and you can also set the volume for speech.

Read one word at a time is useful if you want to force the speech to go slowly. It also forces voices that do not highlight each word to do so. You can change the pause between the words.

Click on **test speech** to hear the effect of changes you make to the voice.

PRIVATE VOICE

The private voice is used to speak for auditory feedback to the user (see below for more information on auditory feedback).

The settings are largely the same as for the public voice, but you can select to **Use right audio channel only**. This arrangement allows the right audio channel to be linked to a headset for the user whilst the left audio channel is broadcast publicly.
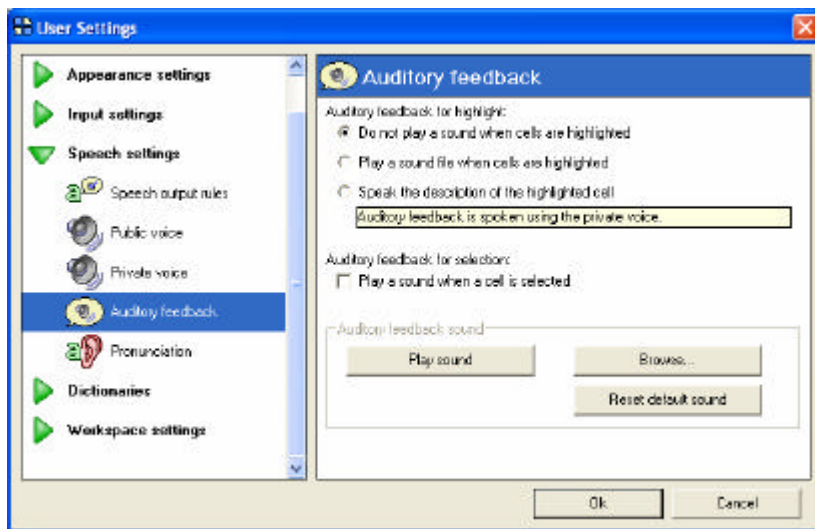
You can provide extra information to the user about the cells using sound. This is called Auditory Feedback.

When highlighting cells The Grid 2 can **play a sound**, which will help the user to identify that the highlight is moving. If you select this option, you can change the sound by browsing for a different sound file.

You can also select **speak the description** to read the cell's description aloud. Normally this is the text in the cell, but the cell description can be changed for each cell. You can also specify the description for rows, columns and blocks when using block scanning. The **private voice** is used for auditory scanning, and it can be configured to speak more quickly and quietly than the public voice.

You can also select **play a sound when a cell is selected** to help reinforce the action of selecting a cell.
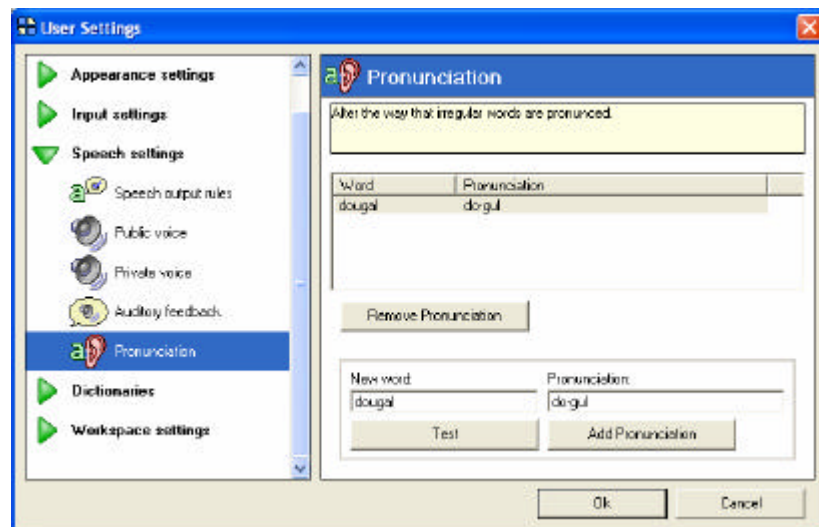
Here you can change the way that different words are pronounced.

If you have a word that is not being pronounced correctly, enter it in the **new word** box, and enter a phonetic version in the **pronunciation** box. Click **test** to check how it sounds, and click **add pronunciation** when you have happy with it.

*Note that different voices pronounce words differently. Make sure that you have the correct voice selected in **Public voice** before you change the pronunciations.*

You can remove a pronunciation by selecting it in the list and clicking **remove pronunciation**.

11.5.   Dictionaries
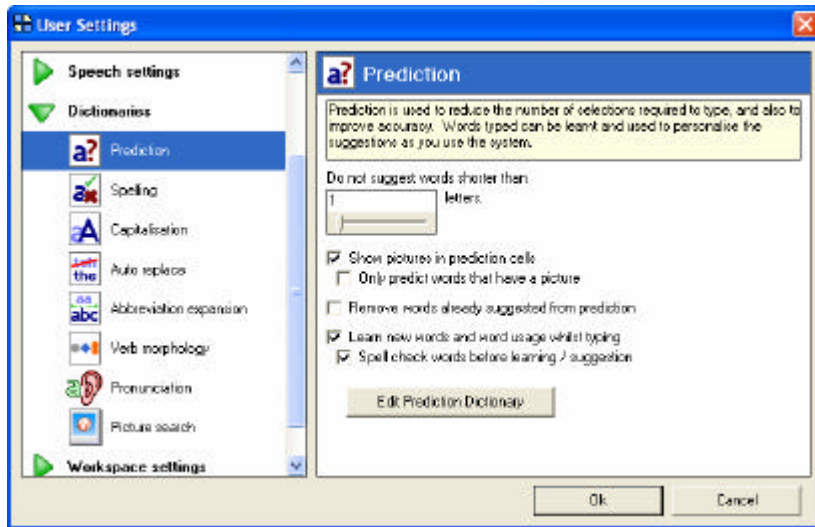
You can change the settings for prediction here – see section 9.3 for more information on prediction and prediction settings.
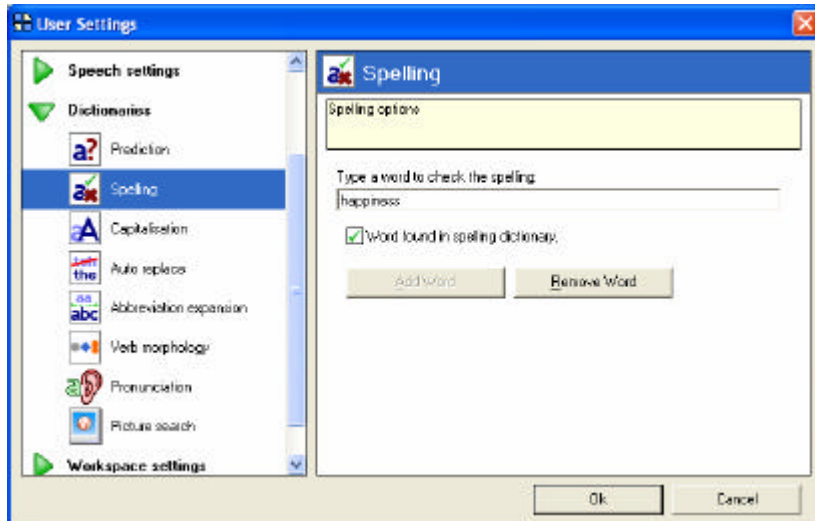
The spell checking is used for prediction and for the "spelled-like" command. Type a word to check the spelling – you will see a tick or a cross to let you know if the spelling is ok.

If you want to add a word to the dictionary, type the word and click **Add word**. To remove a word, type it and click **Remove word**.

CAPITALISATION
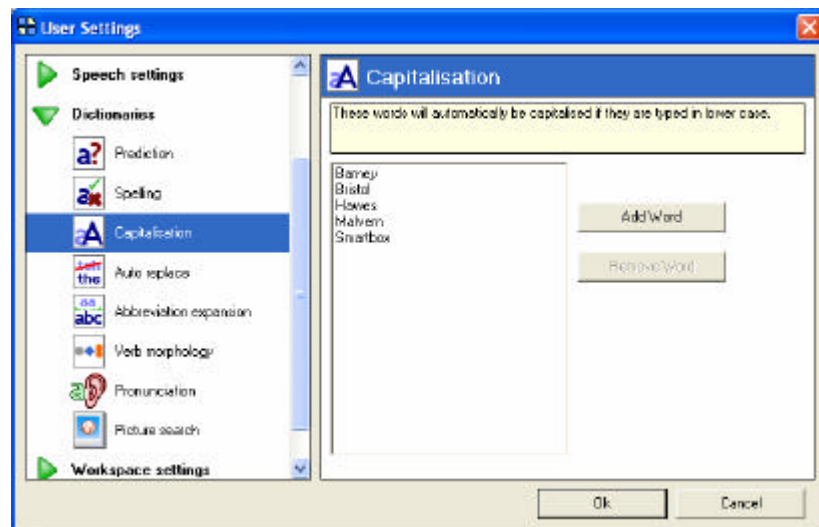
Here you can specify a list of words that are automatically capitalised as you write.

To add a word, simply click **add word** and then type the word. To remove a word, select it in the list and click **remove word**.

AUTO REPLACE
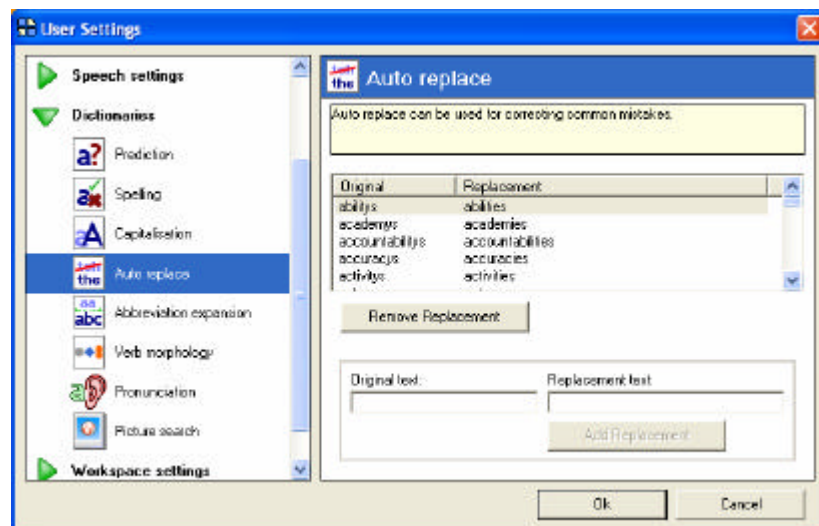
This is a place where you can put in command mistakes to be replaced automatically. We've put in lots of plurals, so for example "foxs" is replaced with "foxes".

Abbreviation expansion allows you to have abbreviations for words or phrases that you use often. When you type the abbreviation, the replacement phrase will be suggested in the prediction cells.

VERB MORPHOLOGY

Change the pictures use for the 'Verb morphology in prediction' command here, and also select if repeated verb forms should be displayed. See section 9.3 for more information on using Verb Morphology.

PRONUNCIATION

This is the same as the settings page under **Speech settings**.

PICTURE SEARCH

Here you can select which picture library is used to search for pictures in prediction cells and when creating new cells.

11.6.   Workspace settings
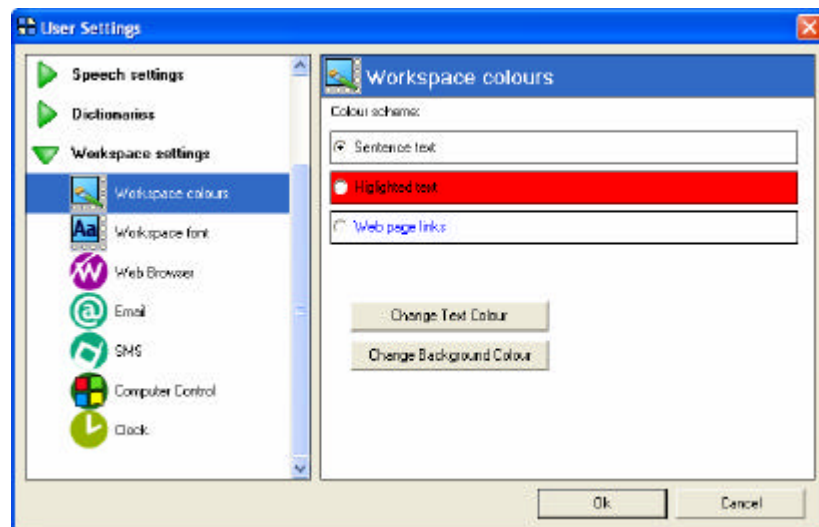
WORKSPACE COLOURS & WORKSPACE FONT

These pages are the same as those under **Appearance settings**.

WORKSPACE PAGES

Some workspaces have particular settings – for example, the email workspace allows you to enter the details so that The Grid 2 can access your email account.

12. Pointer input

Pointer input covers a range of different ways of accessing a computer. Anything that moves the Windows mouse pointer can be used for pointer input to The Grid 2. This includes:

- A **mouse**.

- A **trackball**.

- A **touch screen**, including those found on a tablet PC or a communication aid.

- A **head pointer**, such as the SmartNAV.

Note that the MyTobii eyegaze system has a special setup in The Grid 2 and is not counted as pointer input. Other eyegaze systems will act as pointer input.

To find the pointer input settings, select **Edit > User settings** from the menu, and then select **Input settings > Pointer** from the categories available.

Ensure that **Enable mouse input** is ticked, and then click on the **Settings** page.

You can select the type of pointer that you are configuring: mouse, touchscreen or headpointer. When you select one of these the relevant options are displayed and other options are hidden.

12.1.   Mouse

There are very few options for mouse input, as it very straight forward.

MAGNIFY HIGHLIGHTED CELL

This will increase the size of the cell under the mouse pointer.

COLOUR BORDER

Normally the background of a cell changes colour when it is highlighted. If this option is ticked then the border of the cell is highlighted instead.

You can change the colour of the cell that is highlighted.

12.2. Touchscreen

Touchscreens have a few more options because they can be used in different ways.

SELECTION METHOD

There are 3 options here:

- **Touch cell to accept:** simply touch the screen to make a selection.

- **Accept on timeout:** after touching the screen, a cell will be highlighted. This cell will be selected unless the screen is touched again within the time limit.

- **Hold finger on cell to accept**: when you hold your finger on one cell for longer than the specified time it will be selected. If you lift your finger before the time has elapsed, or move your finger onto another cell, then the selection will be cancelled.

There is also a tick box for **Accept first cell touched**. When this is ticked, the highlight stays on the first cell that is touched, even if you drag your finger around the screen. If it is not ticked, then the highlight will follow your finger and the cell under your finger will be selected when you lift your finger.

MAGNIFY HIGHLIGHTED CELL

This will increase the size of the cell under the mouse pointer.

COLOUR BORDER

Normally the background of a cell changes colour when it is highlighted. If this option is ticked then the border of the cell is highlighted instead.

You can change the colour of the cell that is highlighted.

MINIMUM TIME BETWEEN SELECTIONS

You can avoid accidental repeats by users who have a tendency to touch the screen more than once involuntarily. Select the time that the user must wait between deliberate selections.

SELECTION TIME

This is the time to wait for a selection when using **Accept on timeout** or **Hold finger to accept**.

You can also choose to **Display countdown indicator**, which will provide visual feedback when you are selecting a cell. The **Countdown indicator colour** should contrast with the **Highlight colour** so that you can see the countdown clearly.

12.3.   Headpointer

Headpointers move the mouse pointer around as you move your head, so the cell that your head points towards will be highlighted.

SELECTION METHOD

There are 2 options here:

- **Use mouse click to accept:** click the mouse button to accept. Many headpointers allow an external switch to be connected to trigger the mouse button.

- **Accept on dwell:** keep the highlight over a cell and the cell will be selected unless the screen is touched again within the time limit.

MAGNIFY HIGHLIGHTED CELL

This will increase the size of the cell under the mouse pointer.

COLOUR BORDER

Normally the background of a cell changes colour when it is highlighted. If this option is ticked then the border of the cell is highlighted instead.

HIGHLIGHT COLOUR

You can change the colour of the cell that is highlighted.

SELECTION TIME

This is the time to wait for a selection when using **Accept on timeout** or **Hold finger to accept**.

You can also choose to **Display countdown indicator**, which will provide visual feedback when you are selecting a cell. The **Countdown indicator colour** should contrast with the **Highlight colour** so that you can see the countdown clearly.

REPEAT SELECTION WITHOUT MOVING THE MOUSE

When you dwell on a cell to make a selection, you normally have to move the highlight away from that cell and then back on again to reselect it. This option allows you to repeatedly select the same cell without moving your head.

DWELL CLICK ON OTHER WINDOWS PROGRAMS

When using the Computer Control workspace, the head pointer can dwell click on other applications. If this option is used then the **Allowed jitter** is the area that the mouse pointer can move.

When this option is used, you will see a target appearing around the mouse pointer when it is not over The Grid 2.
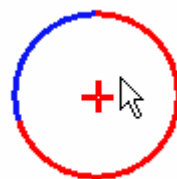
For the first few moments you will be able to move the pointer to fine-tune the location of the target. The target will then lock on, and if the cursor remains within the circle for the **Selection time** then the mouse will click at the centre of the target. If the target locks in the wrong location then move the pointer outside the target to reset the position.

12.4.　　All options

If you select **All options** pointer type then all the different settings for pointer input are displayed, giving you complete control of your pointer input.

13. Using switches with The Grid 2

Switches are used by many people who have restricted or unreliable movement. Switches come in a wide variety of shapes and sizes and can be used with almost any reliable movement – hands, feet and head are common control points, but switches are also available that use blinking or sucking to trigger input.

The selection of switches and switch locations is beyond the remit of this document, so we'll move on to consider how switches are used and how to set them up.

HOW SWITCHES ALLOW YOU TO TAKE CONTROL

Whilst there are a veritable multitude of options for switch input in The Grid 2, the basics of switch input come down to a simple mechanism whereby the user highlights each cell in turn, and then they press the switch to activate the cell being highlighted. This is called the **scan pattern**. We'll look at the options for this in a moment, but first we have the tedious but essential task of connecting the switches to the computer.

13.1. Connection

There are many (too many?) different ways for connecting switches to a computer, but we can't do much about this. What we have tried to do is to keep things simple within The Grid 2. Follow these steps:

1. Plug your switch(es) into your switch adaptor. Plug the primary switch (the one that the user can use most reliably) into socket 1, and any further switches into 2, 3, 4 and so on.

2. Plug your switch adaptor into the computer (it may be built in to a communication aid, in which case you don't need to worry about this step).

3. Select the type of switch adaptor that you have connected.

4. Depending upon what sort of switch adaptor you are using, you may need to select a port for your switch adaptor. If you're not sure which port to use, start a 1 and test them in turn!

5. Press your switch and watch the test lights at the bottom to ensure that your switch presses are detected.

> *There are a number of other options on the switch connection page for filtering switch presses and long hold. Untick all of these if you're just starting out: we'll be looking at these options in section 14.*

MY SWITCHES AREN'T DETECTED

If the lights aren't coming on then check this quick 'idiot' troubleshooting list – it covers the most common problems encountered.

1. Are you sure the switch works? *Do you have another switch you can plug in, or perhaps another switch activated device you can test it with?*

2. Is the switch plugged in to the switch adaptor?

3. Is the switch adaptor plugged in to the computer?

4. If it is a battery operated switch adaptor (such as radio switches), are the batteries flat?

5. Have you got the right adaptor selected in The Grid 2?

6. Have you got the right switch port selected?

MY SWITCH ADAPTOR ISN'T LISTED

If your particular make and model of switch adaptor isn't listed, try looking for a similar one in the list. For example, if it connects via USB, try one of the other USB connectors listed.

The Grid 2 doesn't support all types of switch adaptor, notably keyboard or mouse emulators (such as the old Don Johnson switch boxes). This isn't just down to laziness or fussiness on our part: there are serious problems when you try to do computer control with these switch adaptors. For example, Windows gets its knickers in a twist if you press a switch which acts as a mouse button, and in response The Grid tries to click the mouse button!

If you have one of these, we strongly recommend getting a USB adaptor that emulates a joystick – these sidestep all the confusion and work beautifully.

THE KEYBOARD SWITCH ADAPTOR DOESN'T WORK WITH COMPUTER CONTROL

Well spotted. Actually, the keyboard option is only there so that people can demonstrate the principles of scanning when they forget to take any switches to meet someone. For 'real world' usage, keyboard type switch input is not recommended (see rant above for details).

13.2. Scan pattern
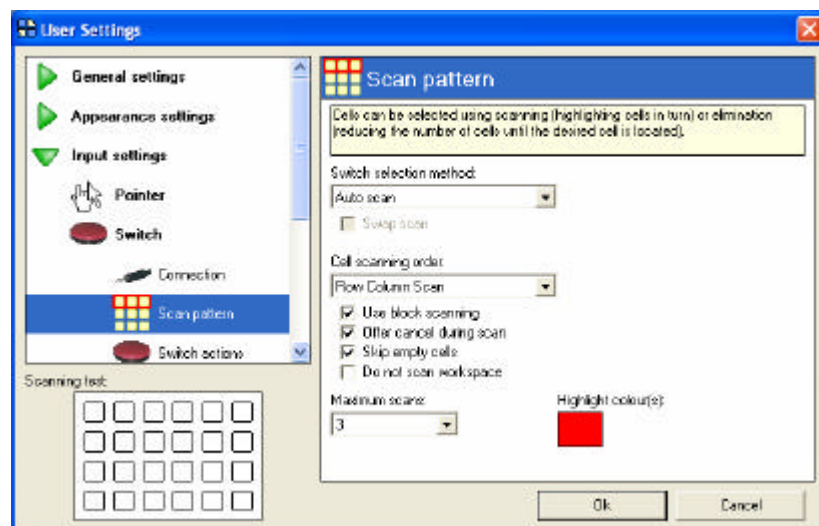
When you are configuring the scan pattern, you can test out the settings that you have selected by pressing your switches: the test region in the bottom left will scan using your currently selected settings.

For each option, there is a recommended setting – if you're not sure, select this initially and try it out, then change to other settings to see what happens.

SWITCH SELECTION METHOD

The first key choice to be made when configuring switch input is *how will the highlight move forwards?* There are four options here:

- **Automatic scan**: the highlight moves forward on a timer, for example highlighting each cell for 1 second before moving on. The highlighted cell is selected by pressing a switch.

- **Hold to advance**: the highlight moves forwards on a timer *when a switch is held down*. When the switch is released, the highlight does not move. The highlighted cell is selected by either pressing a second switch, or waiting for a timeout (not pressing a switch for a short time).

- **Tap to advance**: the highlight moves forward each time the user presses a switch. The highlighted cell is selected with a second switch, or a timeout (waiting for a while without pressing a switch).

- **Elimination**: this one is a bit different. Two (or four) highlights are offered to the user and they have a switch corresponding to each highlight.

Recommended setting: Auto scan

You may also notice the 'swap scan' option is available for some switch selection methods. More information about this and other extra options can be found in section 14.

CELL SCANNING ORDER

Selecting cells one at a time is quite laborious. If you're using a grid with more than five or six cells, it can take quite a long time to get to the cells at the bottom of

the grid. Fortunately there is a simple way to improve this: cells are grouped, and each group of cells is highlighted in turn. Once a group has been selected, individual cells within that group are highlighted.

The most easily understood (and commonly used) example of this is a **row column scan**. Each row is highlighted in turn, and once selected the highlight advances along the individual cells in that row.

Other options available are worth considering too.

- **Simple scan**: each cell is highlighted in turn (no groups are used).

- **Row column**: each row is highlighted in turn, and then individual cells within the selected row are highlighted.

- **Column row**: each column is highlighted in turn, and then individual cells within the selected column are highlighted.

- **Overscan**: there's always one that is a bit different. Overscan is the black sheep here: we'll skip over it for now but you can find out about it in section 14.

Recommended setting: Row column scan

BLOCK SCANNING

If you tick the block scanning option then each grid is divided into a number of groups (usually 4) which are highlighted in turn. Once one of these has been selected, the scan process continues *within that group of cells.* This sounds a bit complicated, but it makes great sense in practise, particularly on grids with many cells. There's more information later about optimising this option for particular grid layouts.

Recommended setting: Block scanning off (unticked)

One of the pitfalls of the group scanning patterns is that the user might select the wrong group and need to cancel the scan and start again. There are four ways out if this happens:

- Select the wrong cell: clearly not a good option.

- Have a secondary switch for cancelling: this is nice. If the user has the ability to use another switch (even if it isn't as easy to use as the primary one) then they can hit this to cancel wrong selections. *You can also use a 'long hold' to provide a second switch. We'll look at all the options for extra switches just a bit later.*

- Offer cancel during scan: once the highlight has finished scanning each cell within the group, an extra option is offered. A large X is displayed in the centre of the grid and pressing the switch at this time will cancel the scan.

- Maximum number of scans: you can also set a maximum number of repetitions that the scan will perform. After the highlight has been over all the cells this many times without the user making a selection, the scan will be cancelled.

Recommended setting: Offer cancel off (unticked)

Recommended setting: Maximum scans unlimited

13.3.   Switch actions

The switch actions allow you to specify what each switch does. Your first switch is always the **primary switch**, so if you only have one switch, there is nothing to select here.

If you have more than one switch then you can select:

- **Accept**: select the highlighted cell.

- **Cancel**: abort the scan and start again.

- **Reverse**: go backwards – I missed by stop!

- **Execute commands**: make your switch do anything (well, almost). This one is complicated (but really cool) so we'll leave it until the next chapter.

Recommended setting: If you are using the **auto scan** switch selection method then make switch 2 **cancel**, or if you are using **tap to advance** make switch 2 **accept**. All others should be **none** initially.

SELECT ON TIMEOUT

If you are using **Tap to advance** or **Hold to advance**, you can select the highlighted cell simply by leaving it highlighted for a moment or two. Tick **Select on timeout**, and find out how to specify the length of time in the next section.

There are a few other options on the switch actions page, but leave them unticked for now.

13.4.　　Switch timing

This is where you set up the speed of the scan. Everyone is different and most people find it best to start slowly and get faster as they practise. If you aren't too sure what you are doing, start with these settings and then adjust them as required (*note that some timings may be greyed-out to indicate that they are not relevant to your setup options*).

- Time when scanning forwards: 3 seconds

- Extra time for first scan: 2 seconds

- Time when scanning backwards: 5 seconds

- Timeout when no switch pressed: 8 seconds

YOUR SWITCHES ARE READY

Well, we made it! We covered a lot of options there but hopefully you followed it and can select cells with your switches. Once you've used the switches for a while,

you may want to see what you can do to make scanning more efficient and less frustrating. The more advanced switch options are covered in the next chapter.

14. Optimising switch setup

Once you have a basic switch setup in place, you can use several extra options to make switching faster and less frustrating.

14.1.   Switch connection

FILTERING ACCIDENTAL PRESSES

You can filter out unwanted presses caused by involuntary movement such as a tremor. Low quality switches or switch cables can also cause switches to activate several times when they are pressed or released, and this can be filtered out.

Filter short presses will ignore any switch presses shorter than the selected time.

Filter repeat switch presses will ignore any switch presses within (say) 1 second of the previous switch presses. The time can be selected.

To test the switch filtering, press the switch(es) and watch the test lights in the bottom left of the window. This will tell you if the switch press has been accepted, or if it has been filtered out.

LONG HOLD FOR EXTRA CONTROL

It is often really useful to have a second switch that will cancel the scan, so that incorrect selections do not take too long to recover from. For many people a second switch is not viable, but a **long hold** is an alternate option.

When this option is turned on, holding a switch for longer than a specified time will cause a different switch action to a normal switch press. You can test the long hold time using the test lights in the corner of the window. In Switch actions you can select the action that will happen when a long hold takes place.

14.2.   Scan pattern

Optimising the scan is a very effective way to enhance the speed of access, mainly because you can reduce the number of options that are scanned or selected.

SWAP SCAN

Swap scan is only available when using 2 switches with either **Hold to advance** or **Tap to advance**.

Normally the primary switch is used to advance the scan, but with **swap scan**, the secondary switch is also used to advance the scan. This is best demonstrated with an example:

If swap scan is <u>not</u> selected then a row column scan would advance like this:

Switch 1   Advance through the rows
Switch 2   Select the highlighted row
Switch 1   Advance through the cells
Switch 2   Select the highlighted cell

With swap scan, the number of switch selections required is reduced:

Switch 1   Advance through the rows
Switch 2   Select the highlighted row
             and advance through the cells
Switch 1   Select the highlighted cell

OVERSCAN

Overscan is a technique in which the highlight runs quickly over the cells, at a rate that is too fast for the user to select accurately. When the user presses the switch, they will overshoot the cell so the scan then runs slowly backwards to locate the cell that was wanted.

To try out overscan (it is worth a try!) set these switch times:

- Time when scanning forwards: 0.2 seconds

- Extra time for first scan: 1 seconds

- Time when scanning backwards: 3 seconds

Block scanning is a very useful option for locating the correct part of a large grid quickly. Scanning to the bottom-right corner of a large grid using row column scanning takes quite a while, and block scanning can help speed this up.

When it is turned on, The Grid 2 divides large grids horizontally and vertically. The highlight then starts by scanning between the blocks of cells. Once a block of cells has been selected, the scan continues as normal within that group of cells.

You can override the normal pattern of scan blocks for each grid and select which cells are in each block.

To do this:

- Press **F11** to enter Edit Mode

- Click on **Edit grid settings**

- Click on the **Scanning** tab

- Select **I want to select scan blocks manually**

- Click on **Ok**

This grid will now be ready to have the scan blocks manually allocated.

Select **View > Cell information > Scan block** from the menu. The corner of each cell will have a number to indicate which scan block that cell is in. To change the block that a cell is in, select the cell and press a number from **1-8**. You can also press **0** to mark a cell that should not be scanned, indicated with an X in a red box.

To include a cell in more than one scan block, **double-click** on the cell. Expand the **Scanning** options in the bar on the left and select **Change scan block**. Here you can tick more than one block to include the scan in.

Selection by elimination is a new way to select cells in The Grid 2. The principle is that you have 2 switches, and the cells are split into 2 groups. You press the switch corresponding to the group of cells you want, and this group is sub-divided into 2 smaller groups of cells. This is a very efficient way to select cells.

For ease-of-use, your switches should be different colours (you can set the highlight colours to match the switches).

If you're feeling dextrous and adventurous, you can also eliminate with 4 switches.

14.3.   Switch actions

EXECUTE COMMANDS

In addition to some predictable switch actions (accept, cancel and reverse) there is another option: **Execute command(s)**. This allows you to activate any Grid 2 command by pressing a switch.

For most users, this won't be one of their primary switches, but it could be used on a secondary switch (or a long hold). Useful ways to use this switch action include:

- Activate an environment control function, such as an alarm

- A switch could be configured to speak "yes" on a short press or "no" on a long hold

REPEAT SELECTION WITH SWITCH 2

With most scanning setups, only switch 1 can be used when not scanning; other switches have no effect until the scan is started. You can take advantage of this by using switch 2 to repeat the last cell selected when pressed. Furthermore, if the last cell was a jump then switch 2 will jump back.

START NEXT SCAN AUTOMATICALLY

If you are using an **Auto scan** that advances on a timer, you can opt to start the next scan as soon as a cell is selected. This reduces the number of switch presses required.

If you use this option, you probably should consider setting **Maximum scans** to 2 or fewer (Maximum scans is an option on the Scan pattern page).

15. Grid explorer

Grid Explorer is used for managing users and grids.

15.1.　　Exploring users

Most of the options for users are accessed by selecting a user and either looking in the menu, at the bar on the left, or by **right-clicking** on a user to show a context menu.
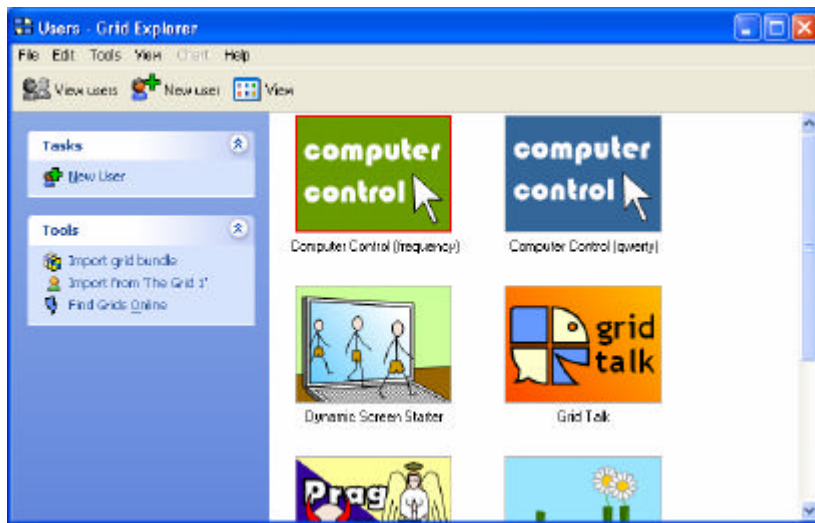
NEW USER

To create a new user, click the **New User** button on the toolbar or in the bar on the left. Enter a name for the new user (you can change the name later).

ACTIVATE USER

Activating a will load the user's settings and grids. This is the default action, so you can **double click** on a user or **press enter** to activate the selected user.

EXPLORE USER

This opens a new Grid Explorer window showing the grids that this user has.

SET START USER

This will make this user the default user for when The Grid 2 starts. The default user has a red border. To set

The Grid 2 to start with the default user instead of Grid Explorer, see section 16 of this guide.

CLONE USER

Clone user will make a copy of the current user. All the settings and grids will be duplicated and the two users can then be modified independently of each other.

RENAME USER

Change the name of a user. You can also press **F2** to rename the selected user.

DELETE USER
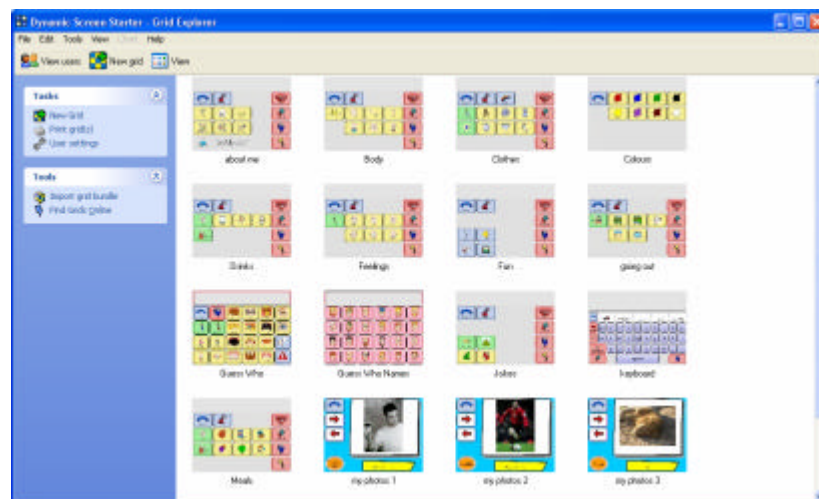
Remove all of a user's grids and settings from your computer. Note: this cannot be undone, so use with caution!

USER SETTINGS

Edit the settings for the selected user.

15.2.   Exploring grids

To explore a user's grids, select a user and then choose **Explore User**.

OPEN GRID

Open the selected grid. If the user who owns this grid is not loaded, that user will be loaded.

Only one grid can be loaded at a time, so if you have another grid open it will be closed.

MAKE HOME

Set the selected grid as the Home grid. This is the first grid displayed when this user is activated.

DUPLICATE GRID

Make a copy of a grid.

RENAME GRID

Change the name of a grid.

DELETE GRID

Remove the selected grid from the computer. Note: use with care; this cannot be undone.

PRINT GRID

Print grids for your records or for use as a communication book.

USER SETTINGS

Change the settings for the selected user.

15.3.　　Grid Explorer Tools

IMPORT/EXPORT GRID BUNDLE

A grid bundle is a group of one of more grids that are compressed into a single file for easy sharing. Grid bundles can be sent by email or uploaded to the Online Grid website.

Select some grids and click **Export grid bundle** to save them as a grid bundle. To import a grid bundle, **double click** on the saved grid bundle in Windows Explorer, or select **Import grid bundle** and locate the file.

IMPORT FROM 'THE GRID 1'

To import grids from The Grid 1, select this option and then select the user from whom you wish to import grids.

Once the grids and settings have been copied across from The Grid 1, you should check the user settings as there are many options in The Grid 2 that were not available in The Grid 1.

BURN TO A CD

Computers are much more reliable than they used to be, but they do still go wrong sometimes - and accidents do happen. We'd be unhappy if you lost any grids or settings that you'd invested time and love in perfecting, and so we've made it easier for you to back up your Grid 2 users and grids.

Burning users to a CD is also a really good way to share your users and grids between multiple computers.

The Grid 2 will prepare the user's files ready to be written to the CD, and then launch the Windows CD writing wizard for saving the files to the CD.

Follow the instructions on screen to complete the CD writing process.

RESTORING A BACKUP

If you want to restore some grids from a CD onto your computer, you'll need to get your hands dirty with Windows Explorer. It's not tricky, but you'll need to

pay attention if you're not familiar with copying files in Windows.

1) Close The Grid 2 if it is open. It will just get in the way.

2) Open **My Computer**, and double click on the folders to locate your Users folder:

C:\Program Files\Sensory Software\The Grid 2\Users\

3) You need to pop the CD with the user(s) into the drive. Windows should attempt to auto-play the CD and offer you the option to **Explore files on the CD**. If not, you'll need to open My Computer again and locate the CD drive.

4) On the CD you will see one folder for each user that has been saved to the CD. And in your Users folder, you will see one folder for each user that is on your computer. If the user that you want to get off the CD is not already on your computer, it will be straightforward to **drag** the folder from the CD into your user's folder.
If a user with that name already exists on your PC, you're going to have to rename or delete the folder before copying off the CD. It is usual to rename the user by adding the word "old" to the end of the folder name – and make sure that the backup is all working and contains the grids you expected before deleting the unwanted user.

FIND GRIDS ONLINE

This will launch the Online Grids website, where you can see grids made by other people and also add your own grids for others to use.

15.4.   Changing the view

You can view grids and users in different ways to make it clearer.

ICONS / LIST

Each user or grid is shown with a large icon (icons) or a small icon (list).

THUMBNAILS

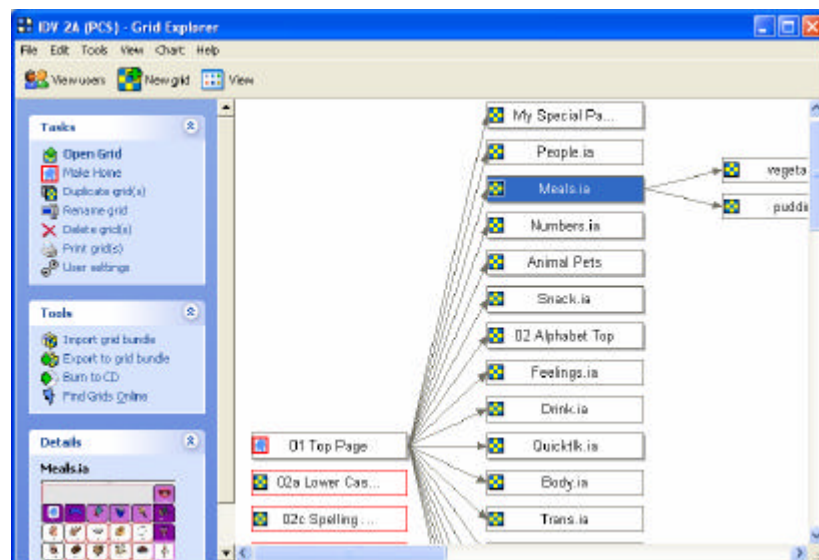A preview of each grid is displayed in a thumbnail to help identify which grid is which.

DETAILS

See more information about each user.

CHART

The grids are displayed in an organisational chart.

The first grid on the left is the Home grid. From there, arrows extend to the grids that can be reached from the home page. Grids with a shadow have jumps on them; click on a grid twice to expand the jumps from that grid.

16.   Program preferences

Program preferences allow you to change settings that apply to the whole program.

To access the preferences select **File > Preferences** from the menu.

16.1.   Options
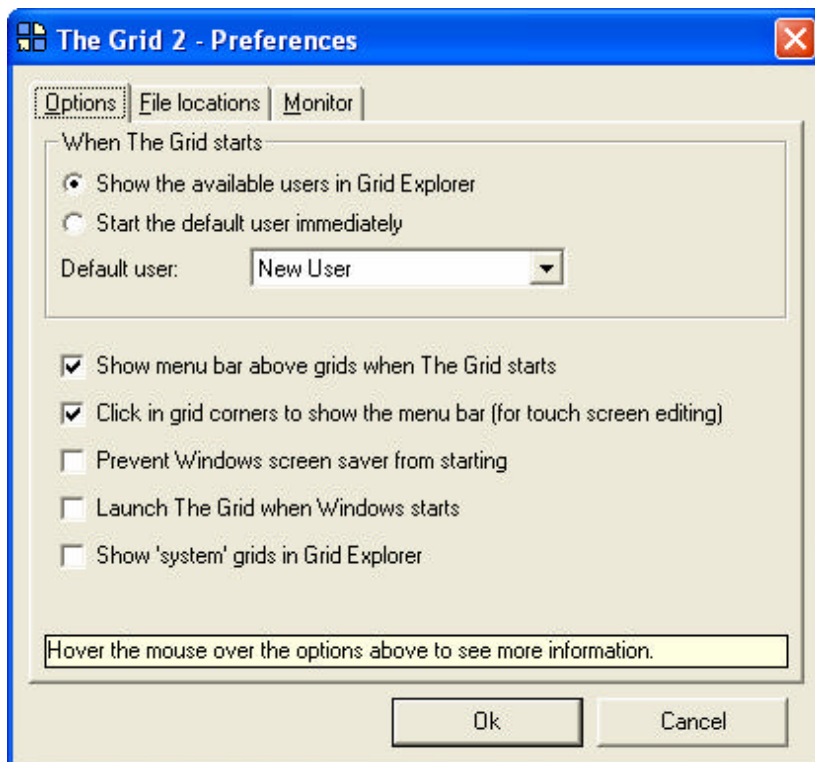
SHOW THE AVAILABLE USERS IN GRID EXPLORER

Grid Explorer will be displayed when The Grid 2 starts, so you can select a user.

START THE DEFAULT USER IMMEDIATELY

The Grid 2 will start with the default user instead of Grid Explorer.

SHOW MENU BAR ABOVE GRIDS

The menu bar will be shown above the grids when The Grid 2 starts. The menu bar can be hidden or displayed at any time by pressing **F12**.

CLICK IN GRID CORNERS TO SHOW THE MENU BAR

If the menu bar is hidden then two red squares will appear in the corners of the grid. Click on the left square then the right square to redisplay the menu bar. This allows you to get to the menu on touch screen systems when there is no keyboard connected.

PREVENT WINDOWS SCREEN SAVER FROM STARTING

This option stops the screen saver from starting.

LAUNCH THE GRID 2 WHEN WINDOWS STARTS

When you turn on your computer, The Grid 2 will start. Combined with the 'Start default user immediately' option, this allows you to go straight into a user's grids when the computer is turned on.

SHOW SYSTEM GRIDS IN GRID EXPLORER

There are two special grids in each user's grids, '_New Grid' and '_Really Useful Cells'. These can be edited if they are displayed in Grid Explorer.

'_New Grid' is duplicated each time you make a new grid for that user. You can edit this to be a template for the layout of a standard page.

'_Really Useful Cells' contains the cells that are displayed when you click on Really Useful Cells whilst editing a grid.

16.2.   File locations
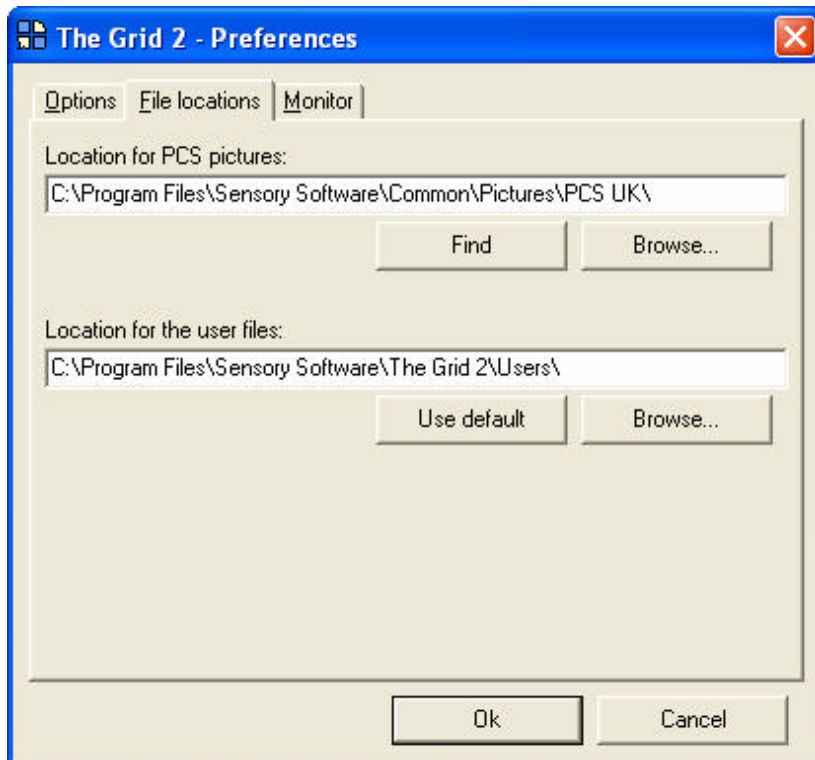
LOCATION FOR USER/RESOURCE FILES

If you wish to specify a different location for a user or for a resource files (such as a network drive), you can do so here.

User files are the user's settings and grids. Resource files are the data files required by The Grid 2.

LOCATION FOR PCS PICTURES

If you have the PCS pictures installed, you need to specify the picture location so that The Grid 2 can locate individual pictures.

Click on **Find** to attempt to locate the pictures automatically (The Grid 2 will check a few standard install locations). If this fails, click on **Browse** and locate the PCS folder manually.

16.3.   Monitor
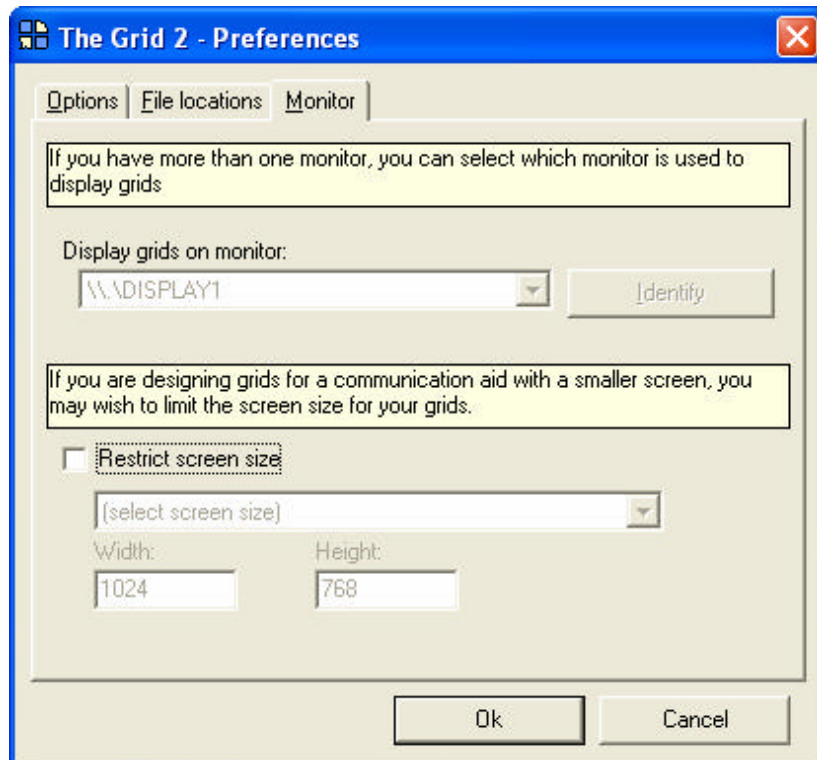
DISPLAY GRIDS ON MONITOR

If you have a multiple monitor system, you can select which monitor is used to display grids.

RESTRICT SCREEN SIZE

Tick this option to force your grids to display at a different screen size. This is really useful if you are editing grids that will be displayed on a communication aid with a small screen, because you can see the size of the cells as they will appear on the device.

You can select a device from the list to get its screen size, or determine the fixed screen size by typing the dimensions in manually.

Note that you cannot display grids that are larger than the monitor that you are working on!

17. Online grids

You can use grids that have been created by other people by visiting our Online Grids website.

http://grids.sensorysoftware.com

17.1. Finding grids

When you first visit the website, you will see the home page. There are different ways to find grids:

SEARCH

You can search for a grid by typing key words. For example, you might type "keyboard" if you are looking for grids to use for typing.

SPOTLIGHTED GRIDS

Sensory Software will spotlight grids that are particularly good to draw your attention to. These are listed on the front page of the website.

CATEGORIES

Grids are sorted into different categories. Select a category to see all the grids that have been marked for inclusion in that category.

RECENT GRID BUNDLES

The most recently submitted bundles are listed on the right hand side of the page.

17.2. Downloading grid bundles

When you locate a grid bundle that interests you, click on the name to go to the page for that bundle.

Here you will see a description of the bundle, along with pictures (if submitted) of the grids.

There is a link to download the grids, and below this you can read comments left by other visitors to the site.

Click on the link to download a grid bundle.

Once it has downloaded, you will be asked if you want to Open or Save the grid bundle. Select **Open** to load it into The Grid 2 immediately, or **Save** to store them on your computer. If you save the grid bundle, you can open the grids into The Grid 2 later by **double clicking** on the grid bundle, or selecting **Import grid bundle** in Grid Explorer.

The Grid 2 will then ask where to save the grids in the bundle:

- **Create a new user**: a new user will be created and the grids will be saved there. This is a good way to check out grids without messing up an existing user. Type a name for the new user.

- **Add to existing user**: the grids will be saved in with other grids for an existing user. Select the user to add the grids to.

17.3.   Becoming a member

If you want to leave comments on grids or submit your own grids for others to use, you need to join the Online Grids site.

Click on **Join** icon, and fill in the form with your details.

To comment on a grid bundle that you have downloaded, go to the page for that bundle, and click on **Add a comment**.

17.4.   Adding a grid bundle

If you have made some grids that you want to share, you can put them online for others to download and use.

- Explore the user that has the grids you want to share, and select the grids.

- Click on **Export grid bundle** to save the grids as a single 'grid bundle' file. Save the file on the desktop, or somewhere easy to find.

You may also wish to save a screen shot so others can see the grids before they download them. Get the grid you want on the screen, and then select **File > Save Picture of Grid** from the menu.

PUTTING YOUR GRIDS ONLINE

- Go to the Online Grids website.

- **Log in** (if you are not a member you need to join).

- Click on **Add a grid bundle** and fill in the details for your grids.

- Click on **Save** to save the title and description.

- Now **Browse** to locate the saved grid bundle, and optionally the saved screenshot(s).

- Click **Save** to store the grid bundle.

UPDATING YOUR GRIDS

You can return later to update the description of your grid bundle, or to resubmit a new file if you have made changes.

18. Appendices

18.1. Text command codes

The following codes can be used in the text command to type special characters in curly brackets (**shift+[** or **shift +]**).

Space bar	{SPACE}
Enter key	{ENTER}
Tab key	{TAB}
Backspace key	{BACKSPACE}
Shift key	{SHIFT}
Control key	{CONTROL}
Alt key	{ALT}
Escape key	{ESC}
Home key	{HOME}
End key	{END}
Insert key	{INSERT}
Delete key	{DELETE} or {DEL}
Break key	{BREAK}
Print Screen Key	{PRTSC}
Caps Lock	{CAPSLOCK}
Num Lock	{NUMLOCK}
Scroll Lock	{SCROLLLOCK}
Arrow keys	{UP}, {DOWN}, {LEFT}, {RIGHT}
Page Up, Page Down	{PGUP},{PGDN}
F1 … F12	{F1} … {F12}
Brackets	{(}, {)}
Curly brackets	{{}, {}}

You can mix regular typing with special characters just by typing them in together. You can, if you wish, use more than one text command if this makes it easier to manage entering a large amount of text.

*Example: to type **hello** and then **enter**, you would enter the following type text:*

```
hello{enter}
```

Sometimes you may want to create a keyboard shortcut with more than one shift, alt and control held down. To do this, simply type more than one code before the key.

*Example: to type **ctrl+alt+s**, you would enter the following type text:*

```
{control}{alt}s
```

You can also hold down the shift, control or alt keys whilst typing more than one character. To do this, enclose the characters in brackets.

*Example: to hold the **alt** key and type **F** then **O**, you would enter the following type text:*

```
{alt}(fo)
```