**PiCom – brief instructions**

## **Background**

To explain the name, PiCom (Picture Communicator) harks back to the first dynamic screen program I produced in the 1980’s (P. Blenkhorn, A picture communicator for symbol users and/or speech-impaired people, Journal of Medical Engineering & Technology, Volume 16, 1992, Issue 6, pp 243-249.)

## **Current state of PiCom**

PiCom currently plays openboard (https://www.openboardformat.orgcommunication) boards. We plan to update it to allow editing and saving of boards, but our initial focus has been to explore the various input methods (see below).

## **Settings**

To bring up the menus/options either:

* Right click three times on the top left button of the board,

or

* Do a two finger tap on the top left of the board,

or

* Type CTRL+S.

This will bring up something like:

There are two tabs available:

1. Settings 

This lets you set various settings for viewing/controlling the board.

1. Edit

This lets you set the option for each button on the board.

1. *Board*

*A third tab to let you control characteristics of the boards is planned, but not implemented yet.*

# Settings

After making changes closing the board (using the close button at the top left hand corner) will save the settings.

The top level settings are:

## **PiCom Boards**

The board set being used. Several open boards are included and can be selected from the drop down list.

## **Input Options**

Click this option to select how the user can interact with the board.

### *Touch/Mouse*

This allows a user to touch buttons or point and click with a mouse to select buttons.

### *Touchpad*

Here we present an onscreen touchpad that can be controlled by touch or mouse. These are provided at both the left and right hand sides of the toolbar (which you probably want to set to be at the bottom of the screen – see below). This may be useful for users with a very small range of movement. The touchpad can behave as an “Absolute” map of the board (moving around the touchpad will select different buttons) or as a Joystick (ie. Touching or using a mouse on the 8 outer areas of the “3x3” touchpad will move in the selected direction – the central area is used for “clicking” although you can click with any of the allowed switches – see below.

### *Analog Joystick*

The allows a standard Xbox gamepad/joystick to move around the board. It works very well with the Xbox Adaptive Controller (https://www.xbox.com/en-GB/accessories/controllers/xbox-adaptive-controller).

### *Cursor keys/Dpad*

The cursor keys on a keyboard or the Dpad on a game controller can be used to move around the board.

### *Mousewheel*

Inspired by the jog/scroll wheel on very old Blackberry phones this allows you to move around the screen using a mouse/scroll wheel. Selection can be either using row/column scanning or by stepping through the buttons one by one. Selection is via many of the various methods (see below) but does include clicking the mouse/scroll wheel.

### *Switches*

Allowed switches include mouse buttons, keyboard input (space, return, 1, 2, 3, 4), Xbox controller buttons (switch one is A or joystick press, switch 2 is B). PiCom looks for all of these and so you do not need to select which ones are used.

Several switch input modes are available:

* + Two switch step

One switch steps forward a button at a time. The other switch “clicks” the current button.

* + Two switch row/column

One switch steps forward by row. The second switch selects the row. The first switch then steps through the buttons on that row. The second switch then “clicks” the current button.

* + One switch step

The system automatically steps between buttons (see speed setting below). Pressing the switch “clicks” the current button.

* + One switch row/column

PiCom automatically steps between rows (see speed setting below).

Pressing the switch selects the row and then PiCom automatically steps between buttons. Pressing the switch “clicks” the current button.

* + One switch overscan

PiCom steps between buttons very fast. The user presses the switch and then PiCom steps backwards between buttons more slowly. Pressing the switch “clicks” the current button.

### *Face Control*

The camera on your device will be used to determine which direction your face is pointing. It will then move about the board in the appropriate direction. You can also control the speed of the movement. If speed is 0 then you have to centre your face after each step movement. Selecting a button can be done using any switch or by hovering (i.e. not moving) for a given amount of time.

### *Face Control (expressions)*

This is the same as Face Control with the additional option that selecting can be done using facial expressions – either opening your mouth, smiling or by raising your eyebrows.

Appropriate settings will be made available depending on the input mode being used. The full list of input settings is: (only some displayed for each input mode)

### *Allow Zoom*

Only available for Touch/mouse input. This option allows you to enable/disable whether the page can be zoomed and panned, e.g. via a pinch or two finger scroll. Please not that is zoom is allowed then the toolbar will stay visible (and unzoomed) wherever you are viewing on the board.

### *Select on*

This allows a selection to be made using either a Press or Release of touch, mouse button, key, or switch. The selection can also be made automatically on a hover, i.e. stay on a button for a given amount of time.

### *Accept Timer*

This allows the setting of how long a switch (including Dpad etc) need to be held down for before it activates.

### *Hover Timer*

This allows the setting of how long a button needs to be dwelled on before a “click” is automatically performed.

### *Touchpad Size*

If the touchpad input mode is selected, this lets you choose the size of the onscreen touchpad.

### *Speed*

How quickly the system will scan or autorepeat – depends on the input method. A setting of 0 (only available for some input methods) disabled autorepeat.

**Visual**

The settings here are:

* Toolbar

The toolbar can be positioned:

* + ToolbarTop

This toolbar contains a home button, a message line (which can be “clicked” to repeat the current message, a backspace button and a clear button. It is in the “traditional” position at the top of the screen.

* + ToolBarBottom

This option contains the same buttons as the Toolbar top option but is placed at the bottom of the screen. This may be a more convenient position for users who choose the Trackpad option or the Switches option. In these modes on screen Trackpads and Buttons are presented at the left and right hand sides of the toolbar.

* + Fullscreen

Here the toolbar is hidden and so there is no message line.

* Label position

The label for buttons can be place at the top of the button, the bottom, or can be hidden.

* Spacing

This allows you to set how much space is between the buttons, which effectively changes the size of the button images.

* High Contrast

This experimental setting automatically tries to make the board more suitable for some low vision users who may prefer a high contrast display.

* Background

Set the background colour of the board

* Highlight

Set the colour used to highlight buttons and rows

## **Speech**

Lets you select the speech synthesiser to use (this may depend on the operating system and/or browser that you are using. You can also choose the pitch, rate and volume of the speech.

## **Advanced**

The options here are:

### *Auto Home*

If checked, this option lets you select if PiCom will automatically go back to the home screen after selecting a button on any of a set of boards.

## *Load Board From File and Save Board To File*

This brings up a file open dialog that let you load and save obf or obz files from disk.

In addition, *Load Board* will set the chosen board to be the one loaded when PiCom starts.

# Menu

Clicking the Menu tab will display the values for each button on the board:

**Button arrows**

Press these to change which button is being edited. (You can also use the arrow keys on the keyboard.)

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Settings tab

Edit

tab

Close button



**Change picture**

Click this button to choose a different picture for your button.

Note: you can also drag and drop images from your hard disc or a web browser.

**Change audio**

Click this button to choose a different audio file for your button.

*Todo: add record option here*

Set if this button will act as a **home button** (go to home page), **backspace** (delete last item in image list), **clear** (delete all items in image list) or **speak** (speak message in image list).

**Instant message** set this checkbox to instantly play the associated sound but not add it to the message area

**Text**: set label for button

**Vocalize**: set text for text to speech

**Link to**: set board to jump to

Change border and background colour buttons