



ASSISTIVE CONTEXT-AWARE TOOLKIT (ACAT)

USER GUIDE

VERSION 0.9

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1 INTRODUCTION

ACAT is an open source platform developed by researchers at Intel Labs with the goal to benefit people with motor neuron diseases and quadriplegia. Intel created this platform for Prof. Stephen Hawking to replace his decade's old system. It is developed for windows and is meant to provide access to windows applications and capabilities through limited interfaces. It enables users to easily, accurately and quickly communicate using keyboard simulation and text to speech capability. It also enables users to perform common tasks such as editing, managing documents, navigating the Web and accessing emails. The unique and highly configurable system provides researchers with a modern standard software interface to create customized solutions enabled by inputs such as touch, eye blinks and eyebrow movements.

1.1 Organization

This user guide is organized as follows:

Chapter 1: Introduction.

Chapter 2: Has instructions for installing and uninstalling ACAT.

Chapter 3: A quick start guide to get you going with ACAT.

Chapter 4: Has details on how ACAT scanning works.

Chapter 5: Has details on ACAT scanners.

Chapter 6: Has details on ACAT menus.

Chapter 7: Shows you how to use ACAT for tasks such as file and window management.

Chapter 8: Describes ACAT support for various applications such as Microsoft Word, Internet Explorer, Notepad, etc.

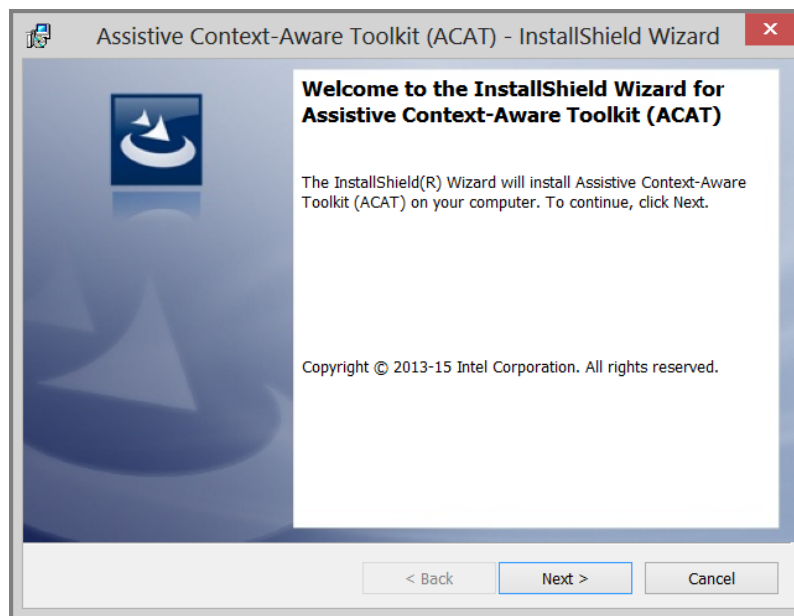
Chapter 9: Has details on how you can configure ACAT through the various settings dialogs.

2 INSTALLATION

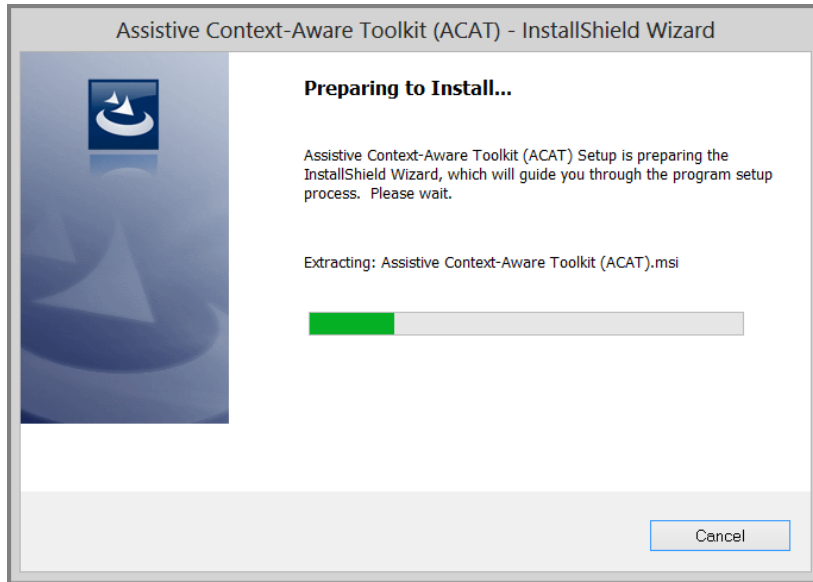
2.1 Installing ACAT

This section lists the steps for installing ACAT on your computer.

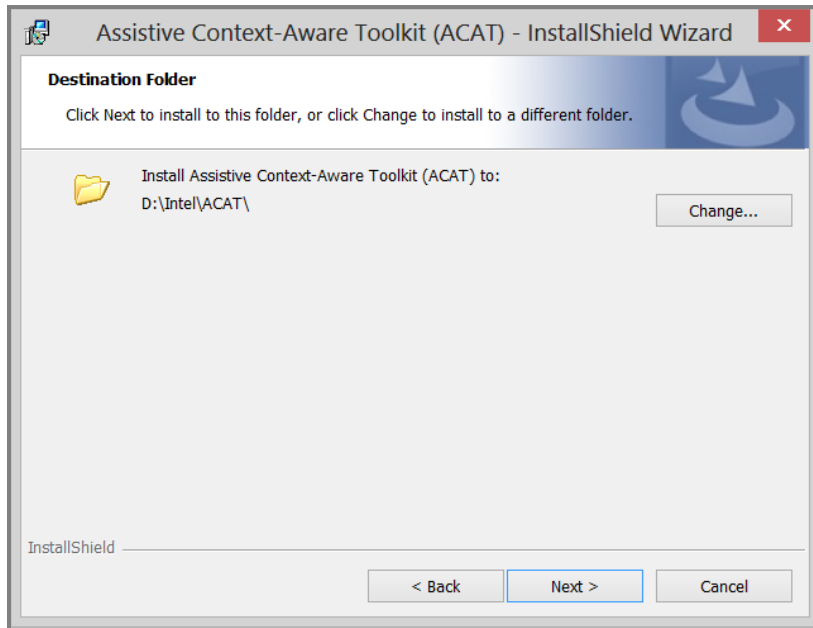
1. Download ACATSetup.exe.
2. Right click on ACATSetup.exe and choose "Run as administrator".
3. Windows will display a "User Account Control" dialog box. Choose "Yes".
4. ACAT has a dependency on Microsoft .NET Framework 4.5. It will check if your computer has this framework. If it is not already installed, it will install it now.. Click on "Install" when it prompts you to install the framework.
5. The Welcome screen will be displayed. Click "Next"



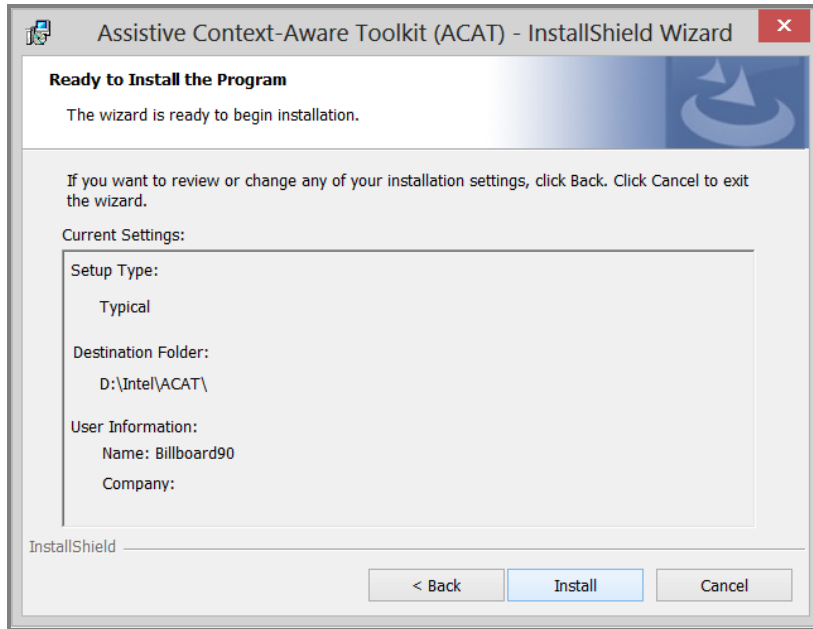
6. Setup will extract ACAT components.



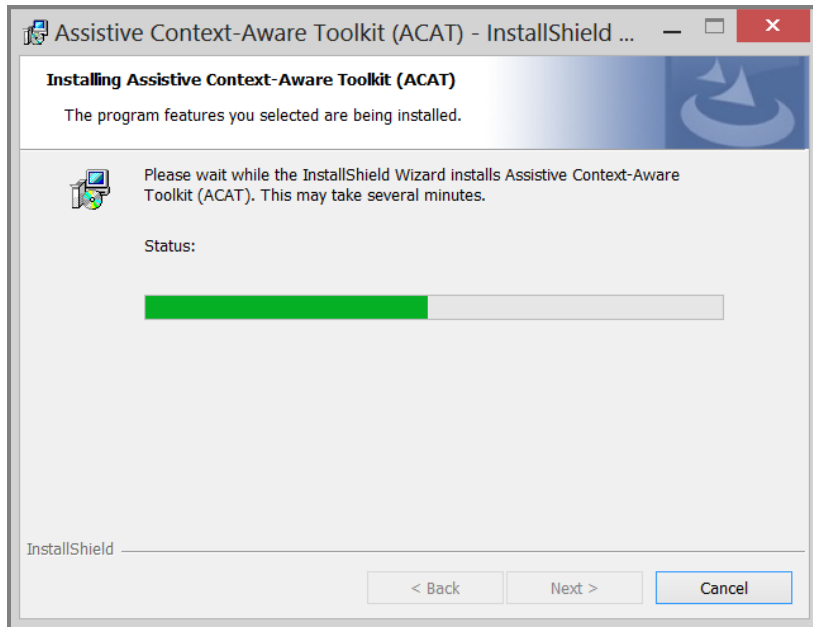
7. Setup will prompt you to select the folder to install ACAT. Click on "Next" to select the default folder C:\Intel\ACAT.



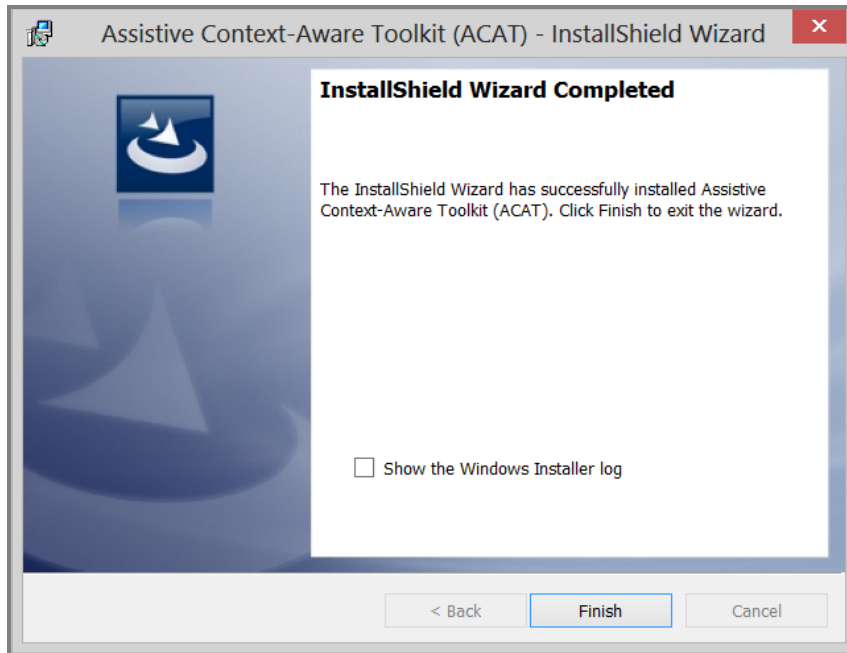
8. The following dialog is displayed. Click on “Next”.



9. Setup will begin installing ACAT.



10. When installation is done, the “Installation Completed” dialog will display. Click on “Finish”.



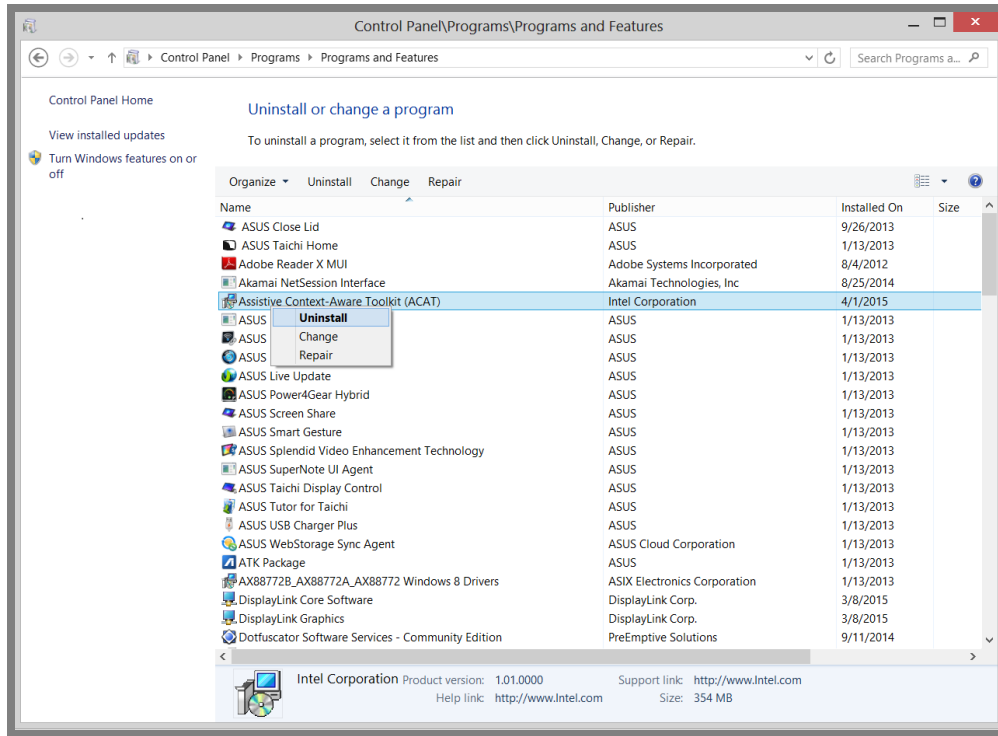
11. After you press Finish, ACAT will silently install the Presage Word Prediction software. This will take a few seconds.

2.2 Uninstalling ACAT

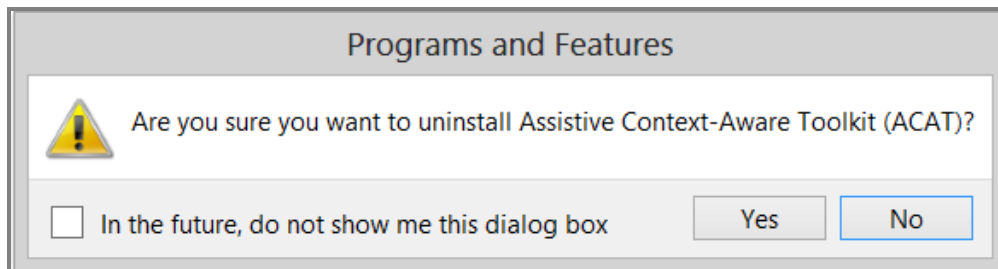
Follow these steps to uninstall ACAT.

1. If the ACAT application is running, close it.
2. Launch Windows Control Panel and choose on “Uninstall a program”.
3. From the list of programs, look for “Assistive Context-Aware Toolkit (ACAT)”.

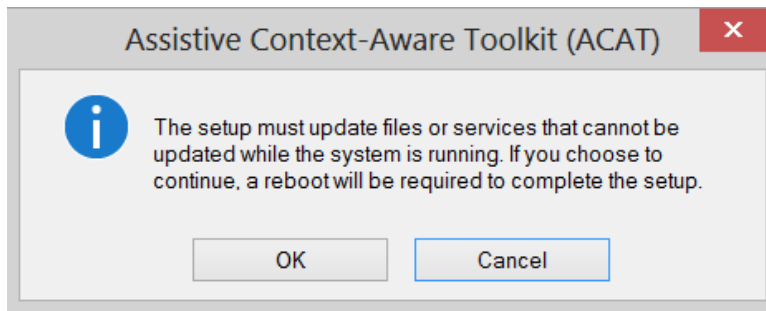
4. Right click on it and choose “Uninstall”.



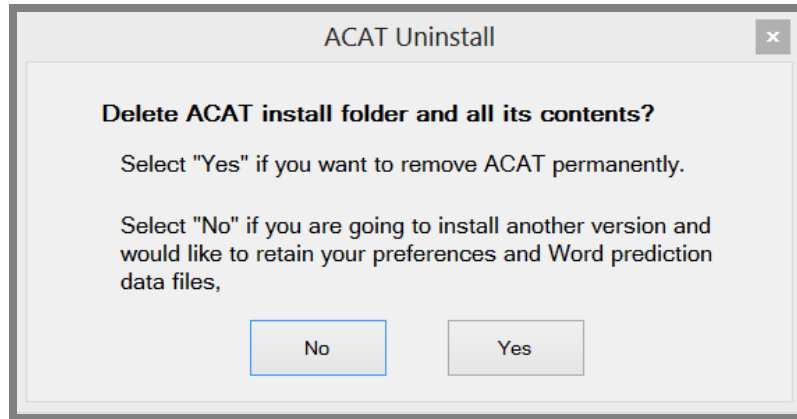
5. Windows will prompt you with a confirmation. Choose “Yes”.



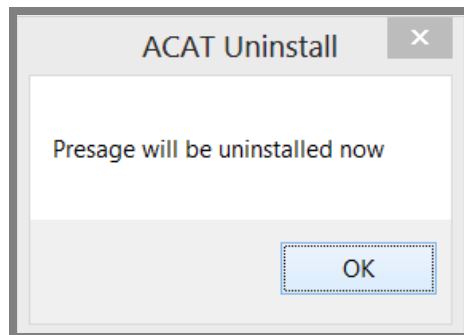
6. Windows will display the following dialog. Click on OK.



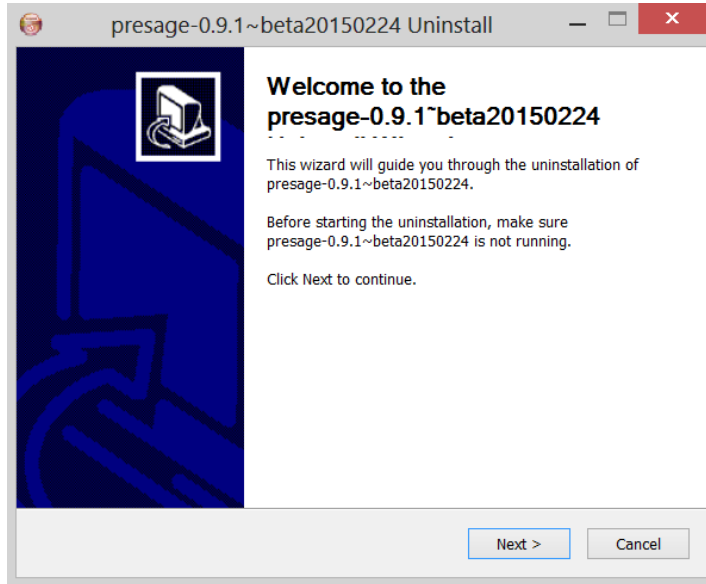
- Setup will prompt you to confirm if you want to completely uninstall ACAT. If you choose “Yes”, setup will delete the entire ACAT folder. All user data files such as your ACAT settings, abbreviations, and custom word prediction models will be removed permanently. Choose “No” if you are planning to reinstall ACAT or upgrade it to the latest version.



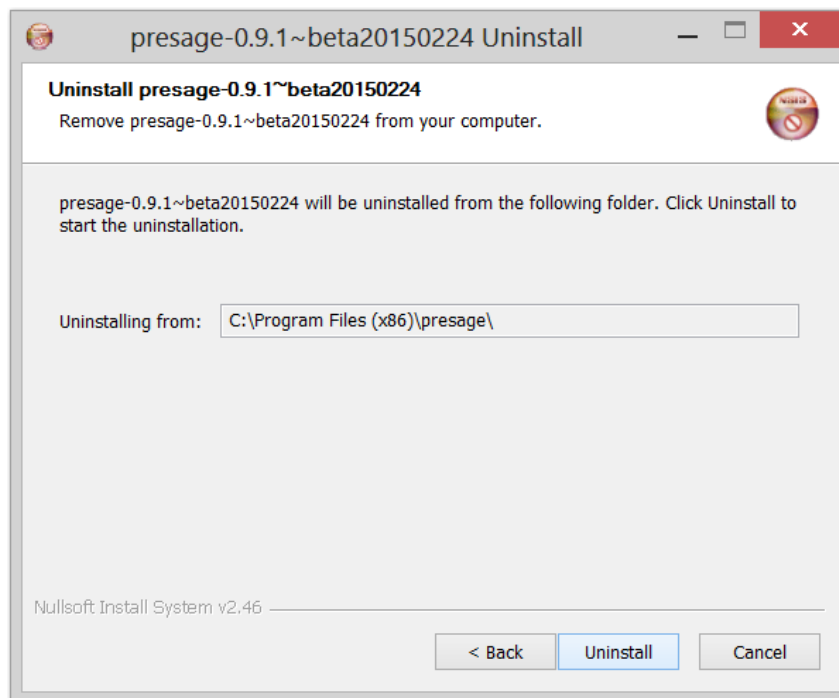
- Setup will then inform you that Presage will be uninstalled next. Click on OK.



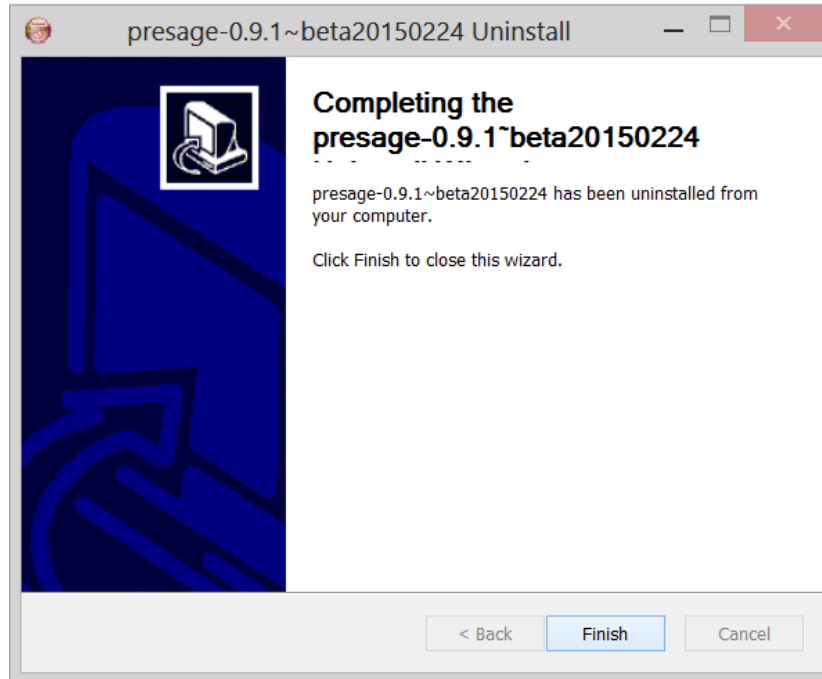
9. The Presage uninstall Welcome screen will be displayed. Click on “Next”.



10. A confirmation dialog will display. Click on “Uninstall”.



11. After Presage has been uninstalled, the Finish dialog will display. Click on "Finish".



3 QUICK START

You interact with ACAT with a “switch”. Every time the switch is triggered, the ACAT user interface will respond with an action. The following switch mechanisms are supported:

- a. **Keyboard:** The F5 key on the keyboard can be used as a trigger. Every time you hit F5, the scanner will respond by executing the action associated with the highlighted element.
- b. **ACAT Vision:** ACAT vision application uses a webcam to detect facial gestures which are then translated into trigger events.
- c. **Off-the-shelf switches:** ACAT supports a number of off-the-shelf switches which plug into the USB interface of your computer. The switches should be configured to send a F5 key press event every time the switch is activated.
- d. **ACAT Infrared switch:** This switch is currently under development, it is meant to attach to a user’s glasses and can detect facial motions (cheek movement) which are translated into trigger events.

Note: Out of the box, ACAT supports keyboard and ACAT vision as input switch mechanisms. The mouse can also be used to activate the UI by pointing and clicking.

The ACAT installer creates four shortcuts on your desktop (see Figure 1).

ACAT App: This is the fully featured ACAT application.

ACAT Talk: This is a scaled down version of the ACAT application with just the Talk window. It lets you type text into a window and have ACAT convert it to speech.

ACAT Tryout: This is a simple application to get you started with using your switch mechanism to interact with the ACAT user interface.

ACAT Vision: Vision application that uses a webcam to recognize facial gestures and translate them into triggers to drive the ACAT user interface (see section 3.1).



Figure 1: ACAT Shortcuts on your desktop

The remaining sections in this chapter will guide you step-by-step on getting started with ACAT.

3.1 ACAT Vision

This section describes how to interact with the ACAT UI using facial gestures as the switch mechanism. You may skip this section if you are not going to use the camera as the switch.

If your computer doesn't have a built-in camera, you must use a webcam that is plugged into your computer. ACAT analyzes the video stream from the camera and looks for facial gestures and translates them into trigger events. ACAT uses cheek twitch as the switch trigger.

You must first ensure that the camera is tracking your face and is able to recognize facial gestures.

1. Make sure you are facing the webcam.
2. From the desktop, run the "ACAT Vision" application. If your camera is on, you will see your face displayed in a window. ACAT first goes through

a calibration phase where it tries to identify your face and calibrate.

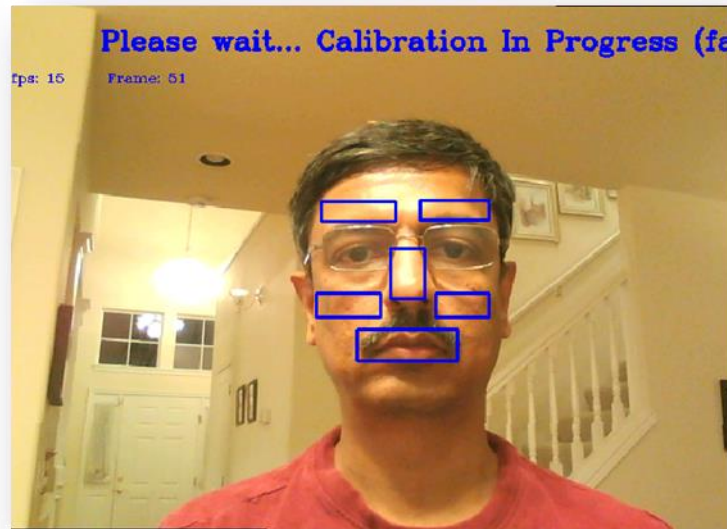


Figure 2: Vision software calibration phase

3. Calibration takes a few seconds. After it has completed, you should see green rectangles around the eyebrows, cheeks and mouth. If it is not able to detect your face, adjust the distance between your face and the camera.

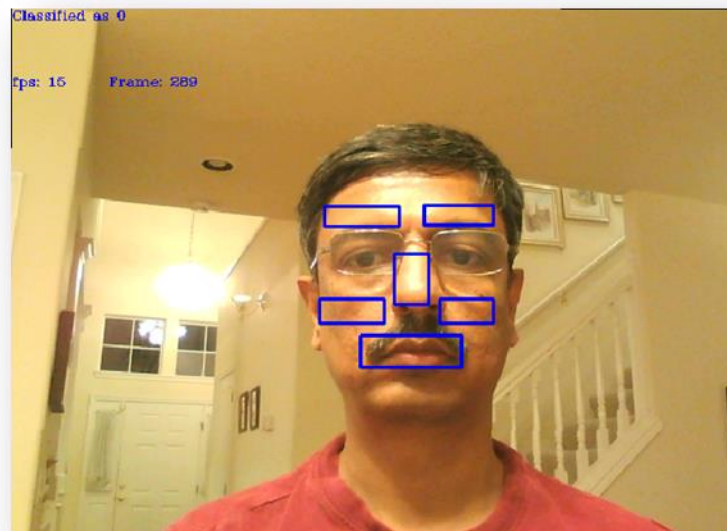


Figure 3: Facial zones

4. Keep your face perfectly still and twitch your right cheek by pulling and releasing the cheek muscle quickly. If ACAT recognizes the gesture, it will display “Cheek Gesture Detected” in the video window.

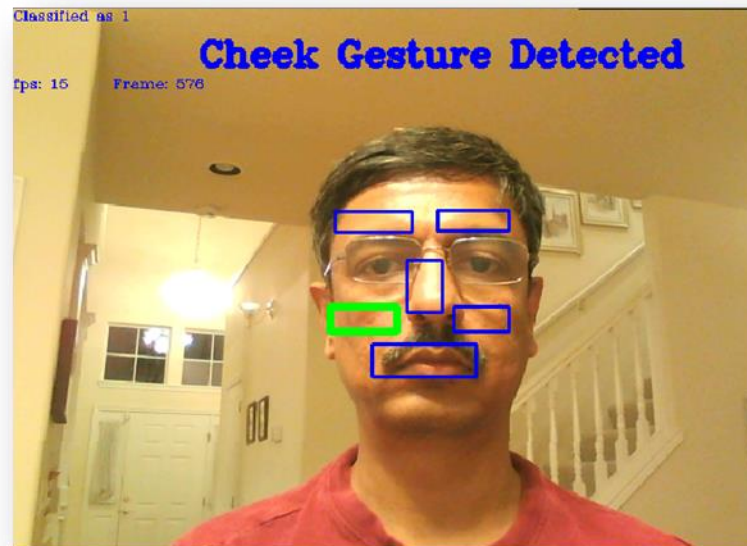


Figure 4: Cheek gesture

5. Repeat Step 4 a few times to get used to using the facial gesture and verifying that the gesture is detected by ACAT Vision.
6. The following hot keys are recognized by the vision application
 - i. Pressing ESC quits the application
 - ii. Ctrl+Alt+Shift+W hides/shows the video window. It acts as a toggle.
 - iii. Ctrl+R forces recalibration.

3.2 ACAT Tryout

ACAT Tryout is a simple application lets you use your switch mechanism for text entry. The modalities and interaction used by this application are very similar to the ones used by the fully-featured ACAT application.

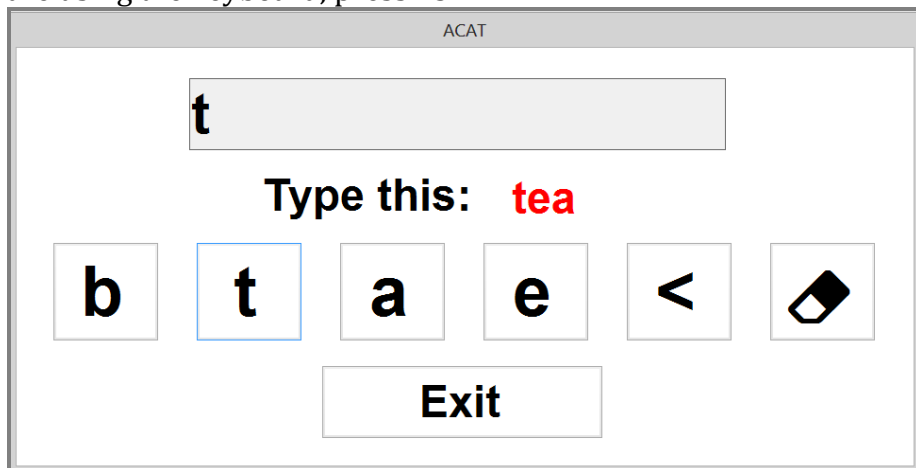
Follow these steps to run ACAT Tryout.

1. If you want to use the camera as the switch mechanism, follow the steps outlined in section 3.1. Test your facial gestures and ensure that they are recognized. Leave the vision application running.

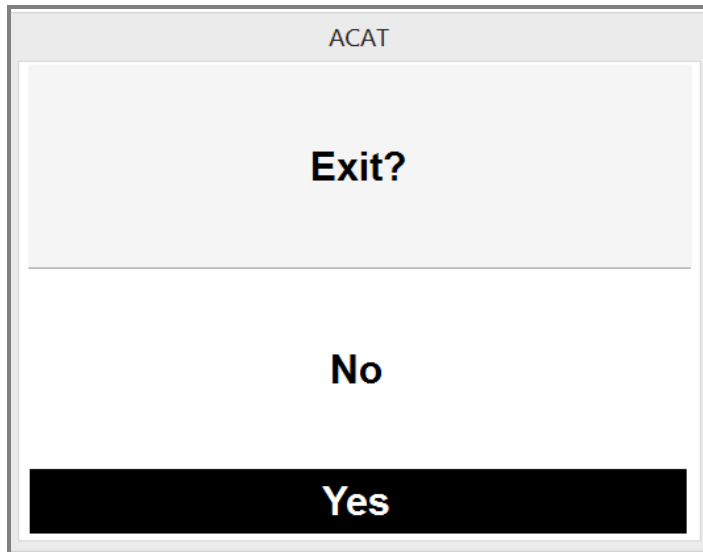
2. If you are going to use the keyboard as the switch mechanism, press F5 to trigger.
3. From the desktop, run the “ACAT Tryout” application. The following window will display.



4. The buttons will be highlighted one at a time. To enter the word “tea”, wait for the letter ‘t’ to get highlighted. While it is highlighted, trigger your switch. If you are using the camera, twitch your right cheek. If you are using the keyboard, press F5.



5. Continue step 3 until you type the entire word. The next word will display. If scanning of the buttons stops, just trigger your switch and scanning will resume.
6. To quit, trigger the “Exit” button. A Yes/No dialog will display. When the word “Yes” is highlighted, trigger your switch. The application will close.



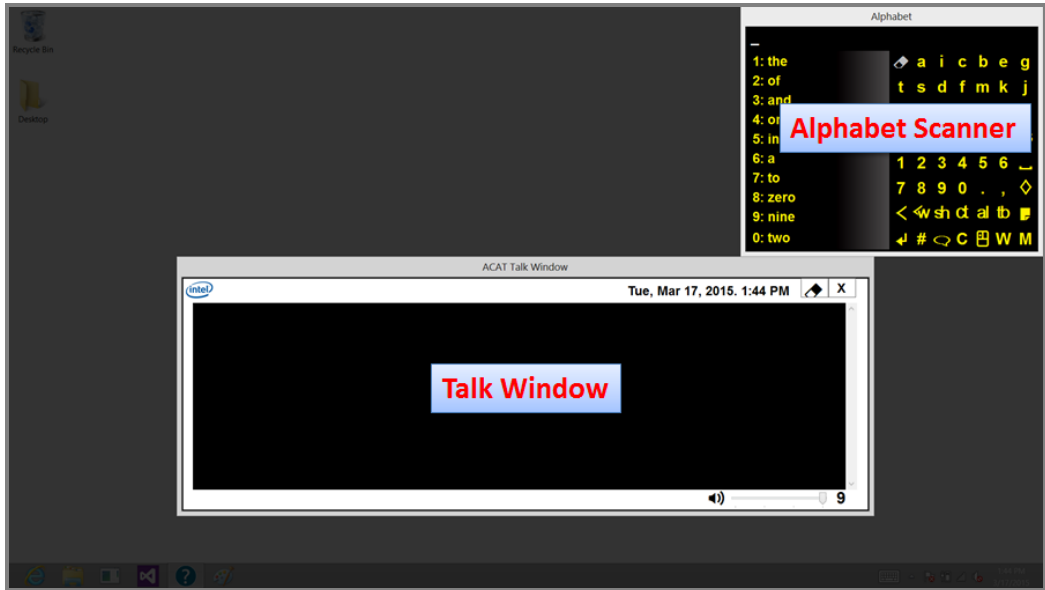
7. If you are using the ACAT Vision application, it will automatically close as well.

3.3 ACAT Talk

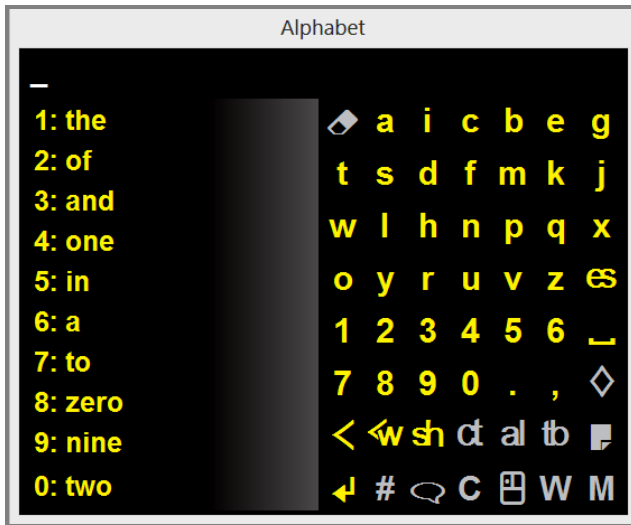
Now that you are familiar with your switch mechanism and how the UI interaction works, we will use the ACAT Talk application to enter text, use word prediction for text entry and convert the text you entered into speech. The ACAT Talk application is a scaled-down version of the fully-featured ACAT application. It supports contextual next-word prediction. ACAT uses the Presage intelligent predictive text entry toolkit for word prediction (<http://presage.sourceforge.net>).

Follow these steps to run ACAT Talk.



1. If you want to use the camera as the switch mechanism, follow the steps outlined in section 3.1. Test your facial gestures and ensure that they are recognized. Leave the vision application running.
2. If you are going to use the keyboard as the switch mechanism, press F5 to trigger.
3. From the desktop, run the "ACAT Talk" application. This will display the ACAT Talk window alongside a window that has the letters of the alphabet. This is the alphabet scanner.



4. The left half of the alphabet scanner contains words based on word prediction. The right half of the scanner consists of letters and other buttons that provide additional functionality. As you type your sentence, ACAT uses the previous words from the sentence to make suggestions to auto-complete your current or next word. The suggestions are displayed in the list on the left. Buttons that are disabled are grayed out.



5. ACAT starts scanning the top and bottom halves of the right side of the scanner. If scanning stops, just activate your switch and scanning will resume.


6. We are going to type the word “here” into the Talk window.
7. First type the letter ‘h’.
 - i. When the upper half is highlighted, activate your switch. ACAT will begin scanning the rows in the box. If you mistakenly select the lower half, wait until the scanning sequence returns to the top level.
 - ii. When the third row is highlighted, activate your switch. ACAT will begin scanning the letters in the third row.
 - iii. When the letter ‘h’ is highlighted, activate your switch.
 - iv. You will see the letter ‘h’ in the Talk window. You will also notice that the word prediction list has updated to show words beginning with the letter h.
8. Next, type the letter ‘e’.
 - i. When the upper half is highlighted, activate your switch. This will start row scanning.
 - ii. When the first row is highlighted, activate your switch. The letters in the first row will be scanned.
 - iii. When the letter ‘e’ is highlighted, activate your switch to type the letter.
9. Now, select the word ‘here’ from the word prediction list. If you see the word ‘here’ in the list, here is how you would select it. To the left of every word in the prediction list is a number which is the index of the word in the list. If the word ‘here’ is the 5th word in the list, follow these steps:
 - i. When the lower half is highlighted, activate your switch to select it.
 - ii. Select the first row in the lower box. ACAT will begin to scan the words in the word list starting from the 1st word.
 - iii. When the number 5 is highlighted, select it. The word ‘here’ will get inserted into the talk window followed by a space
10. Follow steps 7, 8 and 9 to type additional words to form a sentence.
11. When you are done, select  (ENTER) which is the first button on the last row. ACAT will convert the sentence to speech.
12. To exit the application, select the  (ESCAPE) button.

3.4 ACAT Application

The desktop shortcut “ACAT App” is the fully-featured applications which lets you converse, edit text, interact with applications, manage files, deliver lectures etc. You have already used the Talk feature described in section 3.3. If you have not, you may want to try it first.

1. If you want to use the camera as the switch mechanism, follow the steps outlined in section 3.1. Test your facial gestures and ensure that they are recognized. Leave the vision application running.
2. If you are going to use the keyboard as the switch mechanism, press F5 to trigger.
3. From the desktop, run the “ACAT Talk” application. This will display the Talk window with the Alphabet scanner.

3.4.1 Closing the Talk window

You can toggle the visibility of the Talk window by selecting the Talk button  in the last row of the Alphabet scanner.

3.4.2 Creating a new file

Follow the steps laid out in section 6.5 to create a new text file or a Word document. You can then use the ACAT Alphabet scanner to enter text into the document.

3.4.3 Exiting ACAT

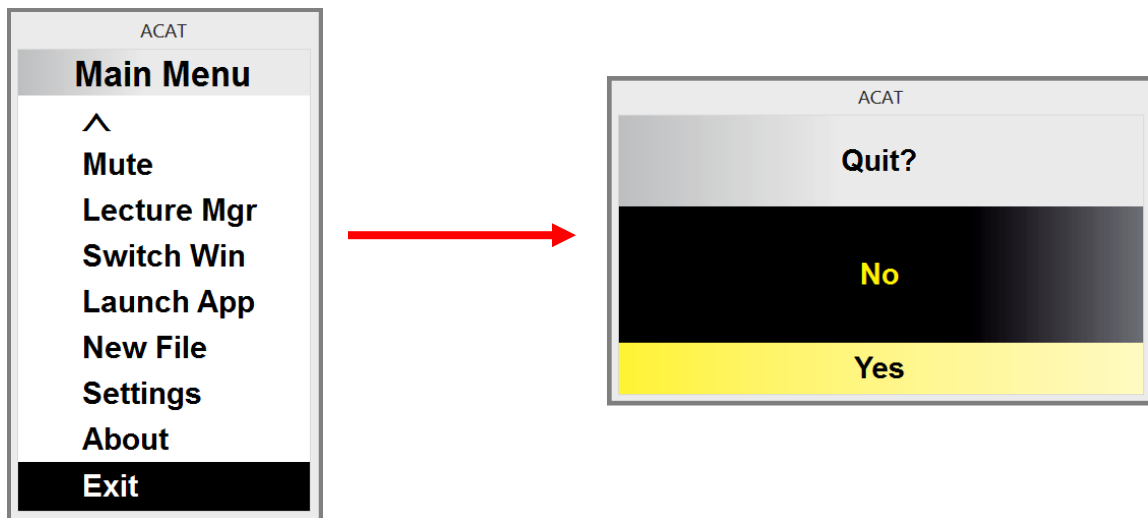



Figure 5: Exiting the application

To exit the application:

- a. Select the  button which is the last button in the last row. This will bring up the main menu.
- b. ACAT will scan the menu options.
- c. Select “Exit”.
- d. ACAT will ask for confirmation to exit
- e. Select “Yes” to quit the application.

The remaining chapters in this document describe all the features of ACAT.

4 ACAT SCANNERS

The ACAT user interface is a collection of ‘scanners’, each of which has a specific function. The Alphabet scanner for instance, lets you type as you would on a keyboard. The Cursor Navigation scanner lets you navigate around a document or a web page. Each scanner is composed of buttons. ACAT scans the buttons in a specific sequence by highlighting them on a timer basis, say, once every second. When the desired button is highlighted, you select it by activating your switch mechanism (see section **Error! Reference source not found.**). ACAT will then execute the action associated with the button such as simulating a key press for a letter or activating a menu.

4.1 Scanning

There is a hierarchy in the scanning sequence. This is to enable you to get to the desired button quickly, with the fewest possible clicks. Scanning starts at the top level and you activate your switch to go down to the next level and so on until the target button is reached. When the target button is highlighted, you activate the switch to execute the action associated with the button.

The screenshots below show the transitions you would make to select the letter ‘h’ in the Alphabet scanner. Each transition occurs on an activation of your switch.

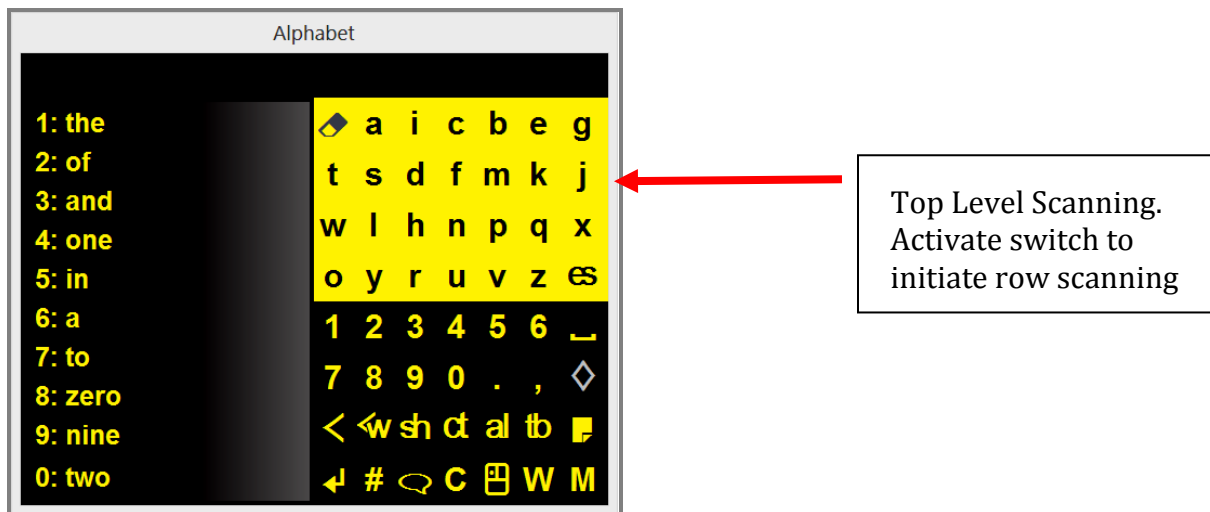
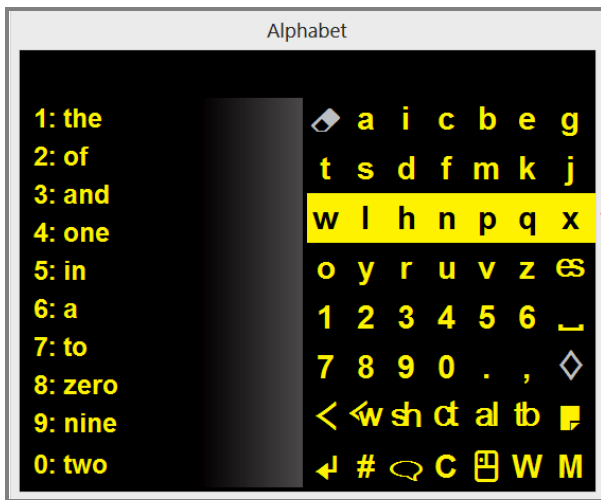
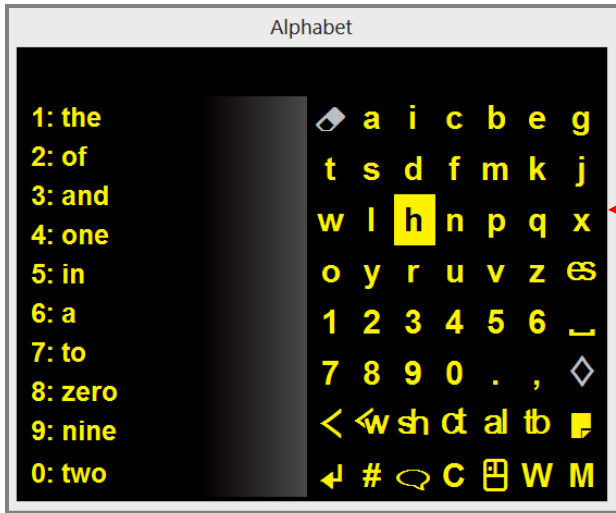


Figure 6: Top Level Scanning



Row scanning.
Activate switch to select third row.

Figure 7: Row Scanning



Column or button scanning. Activate switch to select the third button. This will simulate a key press of the letter 'h'.

Figure 8: Column Scanning

The remaining sections in this chapter gives a detailed description of all the scanners in ACAT.

4.2 The Alphabet Scanner

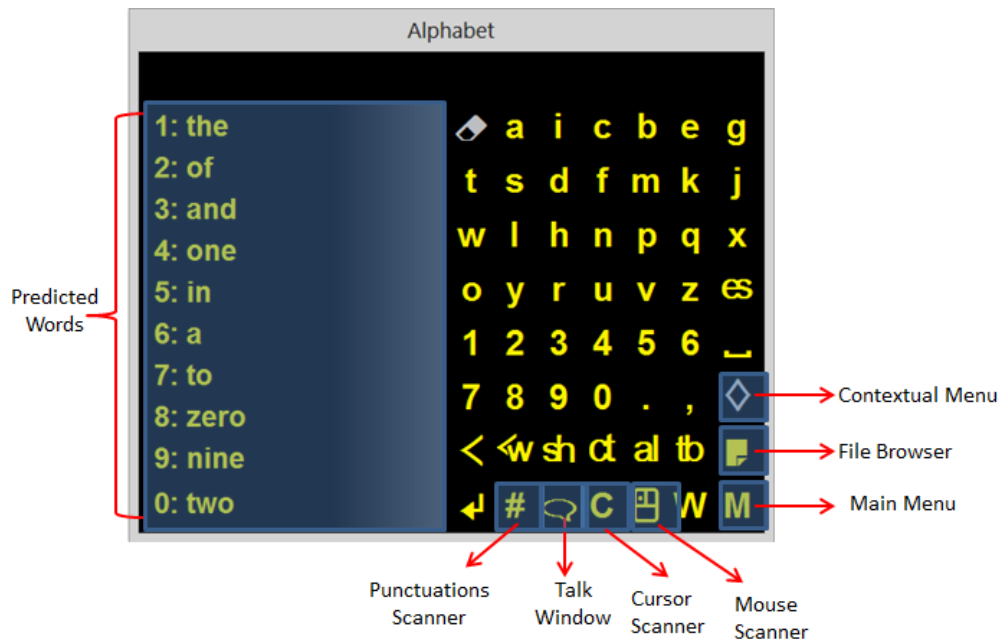




















Figure 9: The Alphabet Scanner

The Alphabet scanner is the main scanner. It enables you to enter text, does word prediction and gives you access to all the other scanners (see Figure 9).

Button	Description
	Clears text in the talk window. This button is enabled only when the talk window is active and has text.
	Sends an Escape key press to the active window
Numbers 1,2,..0	Use these to select a word from the prediction list. The number corresponds to the index of the word in the prediction list
	Space

Button	Description
	Displays the contextual menu. See section 5.1 for details.
	Backspace
	Deletes the previous word.
	<p>Engages the Shift key. The next letter you type will be rendered in uppercase and shift will be deactivated. If you select this button twice in succession, it locks the shift key (equivalent to Caps Lock) and all letters you type will be rendered in uppercase. Pressing selecting this once more will deactivate it.</p> <p>The status bar at the top of the scanner will visually indicate that the shift key is engaged.</p>
	<p>Engages the Ctrl key. Ctrl will be used in conjunction with the next letter you type. For example, if you type 'a', Ctrl-A will be sent.</p> <p>The status bar at the top of the scanner will visually indicate that the Ctrl key is engaged.</p>
	<p>Engages the Alt key. Alt will be used in conjunction with the next letter you type. For example, if you type 'a', Alt-A will be sent.</p> <p>The status bar at the top of the scanner will visually indicate that the Alt key is engaged.</p>
	The Tab key
	<p>Opens the File Browser which enables you to open/delete files. Refer to section 6.2 for details.</p>

Button	Description
	<p>The ENTER key. If the Talk window (see section 6.1) is active, activating this button converts the text in the Talk window to speech. Otherwise, simulates a key press of the ENTER key.</p>
	<p>Toggles the visibility of the Talk window</p>
	<p>Opens the Numbers and Punctuations scanner. This scanner has all the punctuations, numbers and the function keys (F1 to F10). See section 4.3 for details.</p>
	<p>Opens the Cursor scanner. This scanner provides navigation functions such as the cursor arrow keys, page up, page down, clipboard operations etc. See section 4.4 for details.</p>
	<p>Opens the Mouse scanner. See section 4.5 for details.</p>
	<p>Opens the Window menu which provides window managements functions such as move, resize, maximize, minimize etc. See section 7.1 for details</p>
	<p>Opens the Main menu which gives you access to application settings, the File Browser, ability to switch windows, create files etc. See section 5.2 for details.</p>

4.3 The Numbers and Punctuations Scanner

With this scanner, you can type numbers, punctuations and the function keys F1 through F10.

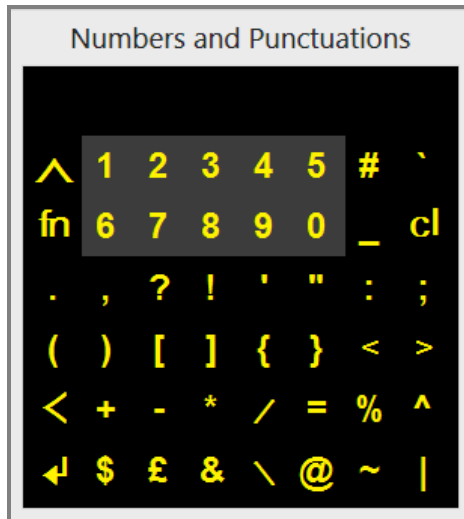







Figure 10: The Numbers and Punctuations Scanner

Button	Description
	Exits the scanner and takes you back to the Alphabet scanner
1,2,3,..0	Types the numbers 1 through 0.
	Engages Caps lock. Press this button again to release Caps lock
	Engages the function key. When you select this, the function key stays locked. The status bar at the top of the scanner will have the letter “F” to indicate this. You can then select one of the numbers 1, 2, through 0 and the corresponding function key will be triggered. For instance, if you select 1, F1 will be triggered. ‘0’ triggers F10.
	Backspace
	The ENTER key

4.4 The Cursor Scanner

The Cursor scanner provides navigation and clipboard operations. It has all the navigation keys found in the numeric keypad of a physical keyboard. You can use this scanner to browse or edit documents.

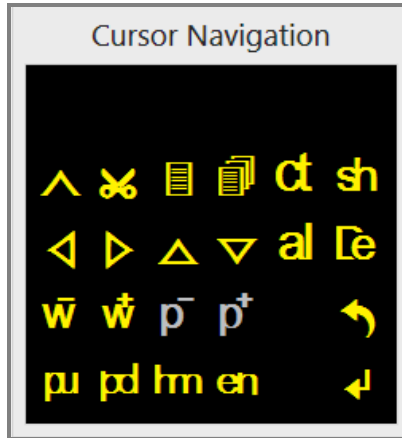












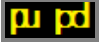





Figure 11: The Cursor Scanner

Button	Description
	Exits the scanner and takes you back to the Alphabet scanner
	Cuts selection into the clipboard
	Copies selection to the clipboard
	Pastes selection from the clipboard.
	Engages the Ctrl key. Ctrl will be used in conjunction with the next letter you type. For example, if you type 'a', Ctrl-A will be sent. The status bar at the top of the scanner will visually indicate that the Ctrl key is engaged.

Button	Description
	<p>Engages the Shift key. The next letter you type will be rendered in uppercase and shift will be deactivated. If you select this button twice in succession, it locks the shift key (equivalent to Caps Lock) and all letters you type will be rendered in uppercase. Pressing selecting this once more will deactivate it. The status bar at the top of the scanner will visually indicate that the shift key is engaged.</p>
	<p>Arrow keys – left arrow, right arrow, up arrow and down arrow</p>
	<p>Engages the Alt key. Alt will be used in conjunction with the next letter you type. For example, if you type ‘a’, Alt-A will be sent. The status bar at the top of the scanner will visually indicate that the Alt key is engaged.</p>
	<p>The Delete key. Deletes the next character.</p>
	<p>Moves the caret back by one word, or forward by one word.</p>
	<p>Moves the caret back by a paragraph or forward by a paragraph. These options are enabled only for Microsoft Word.</p>
	<p>Performs an Undo.</p>
	<p>Page up and Page down</p>
	<p>The Home key</p>

Button	Description
	The End key
	The ENTER key

4.5 The Mouse Scanner

This scanner provides all the mouse functions – ability to move the mouse around the display, and activate the mouse with a click, double click, right click, etc.

ACAT provides two ways of moving the mouse – radar scanning and grid scanning.

4.5.1 Radar Scanning

In the radar scanning mode, a line sweeps across the screen like a radar. When you activate the switch, the line stops moving and the mouse cursor starts moving along the line where the radar stopped. When the mouse reaches the desired point on the display, you must activate the switch once more to stop the cursor. You can then click double click or right-click the mouse by selecting the buttons from the Mouse scanner.

The origin of the radar line is either the center of the display, or where the mouse pointer is currently positioned, and this is controlled through a setting. See section 8.4 for details on settings for Radar scanning.

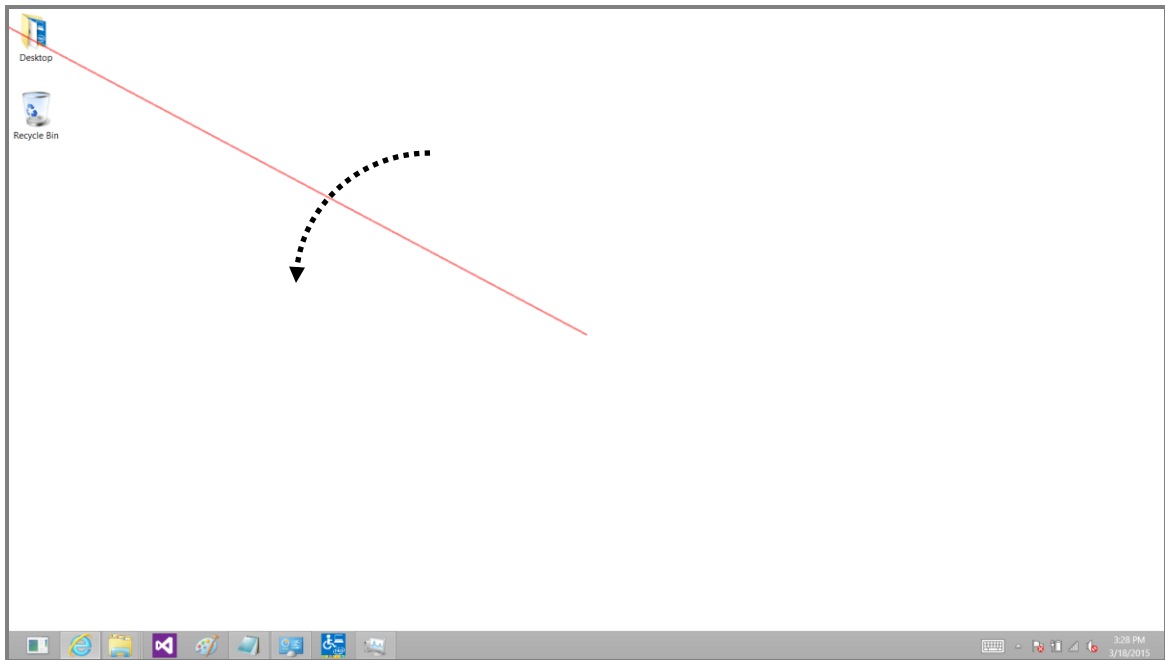


Figure 12: Mouse Radar Scanning

4.5.2 Grid Scanning

In the grid scanning mode, a horizontal line moves across the display. When you activate the switch, the line stops moving and the mouse cursor starts moving horizontally along the line where the grid line stopped. When the mouse reaches the desired point on the display, you must activate the switch once more to stop the cursor. You can then click double click or right-click the mouse using the options available in the mouse scanner.

The starting point of grid scanning is either the edge of the display, or where the mouse point is currently positioned, and this is controlled through a setting. See section 8.5 for details on settings for Grid scanning.

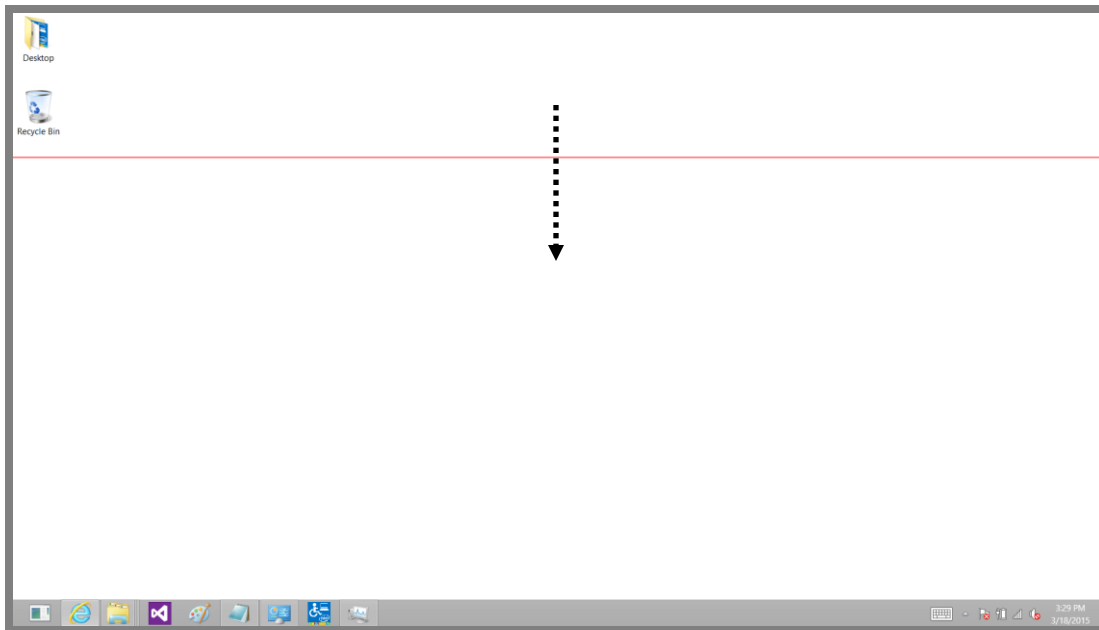


Figure 13: Mouse Grid Scanning

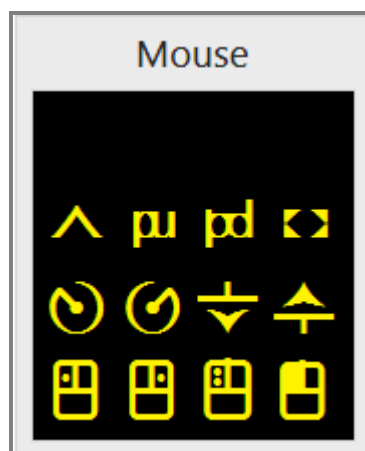











Figure 14: The Mouse Scanner


Button	Description
	Exits the scanner and takes you back to the alphabet scanner

Button	Description
	Page up and Page down
	Repositions the scanner on the screen. The default position is the top right corner. When you select this option, ACAT moves the scanner to each of the four corners of the display on a timer. When the scanner is positioned at the desired corner, activate your switch and the scanner will be positioned there. If the “Auto save scanner’s last position” setting is turned on, (see section 8.1), the scanner will be positioned there permanently.
	Starts radar scanning counter clock wise or clockwise (see section 4.5.1)
	Starts grid scanning from the top edge of the display or from the bottom edge of the display (see section 4.5.2)
	Mouse single left-click
	Mouse single right click
	Mouse left double click
	Mouse left click and hold.

5 ACAT MENUS

ACAT menus provide access to additional features to accomplish tasks such as file management, window management, delivering lectures and configuring ACAT settings. This section gives a detailed description of the menus in ACAT

5.1 Contextual Menu

The Contextual menu can be accessed from the Alphabet scanner by selecting the  button. As the name suggests, the menu that is displayed depends on the active application. If you are browsing with Internet Explorer for instance, the Contextual menu would have options such as Back, Forward, Page Up, Page Down, Search etc. Section **Error! Reference source not found.** has details on the Contextual menus for the applications supported by ACAT.

5.2 Main Menu

The Main menu gives you access to additional features of ACAT such as the Lecture Manager, ability to switch the active application and launch applications.

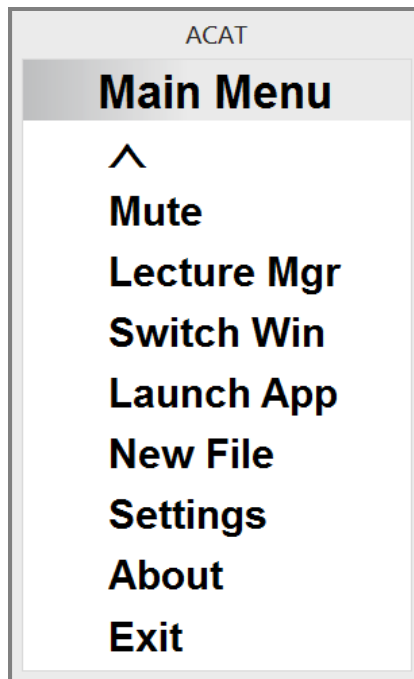



Figure 15: The Main Menu

Menu Option	Description
	Takes you back to the alphabet scanner
Mute	Locks the display by displaying a screen with a pin code. You must type the pin to unlock the display. This feature useful if you do not want your switch mechanism to accidentally trigger when you are engaged in activities such as eating. See section 6.7.
Lecture Mgr	Enables you to deliver lectures using material from plain text or Microsoft Word documents. ACAT loads the text from the document and converts it to speech. You can use your switch to control the pace of the speech. See section 6.6.
Switch Win	Enables you to switch between windows of applications that are currently running on your computer. See section 6.3.
Launch App	Enables you to launch applications like Notepad, Explorer. See section 6.4.
New File	You can create new text or Microsoft Word files with this option. You can enter the name of the file you want to create. ACAT creates the file and opens Notepad or Word so you can start entering text. See section 6.5.
Settings	Displays the Settings menu that gives you access to ACAT settings to configure the application. See section 5.3.

Menu Option	Description
About	Displays the About box with versioning information and attributions. See section 8.9.
Exit	Exit the ACAT application with this option. ACAT displays a confirmation box and then exits.

5.3 Settings Menu

The settings menu gives you options to configure ACAT. You can access the Settings menu by choosing “Settings” from the Main Menu.

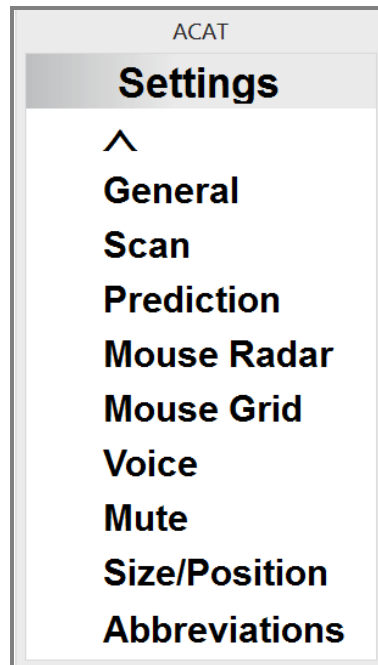



Figure 16: The Settings Menu

Menu Option	Description
	Takes you back to the Main menu.
General	Displays the settings dialog that has options for some of the general settings of the ACAT application. See section 8.1.
Scan	Displays settings dialog for the various timings of the scanners and the number of times the ACAT scans the controls in the scanners. See section 8.2.
Prediction	Displays the word prediction settings dialog. See section 8.3.
Mouse Radar	Displays the settings dialog to control the parameters associated with the mouse movement in the radar mode. See section 4.5.1 for details on the Radar mode and section 8.5 for details on the settings for the Radar mode.
Mouse Grid	Displays the settings dialog to control the parameters associated with the mouse movement in the grid mode. See section 4.5.2 for details on the Grid mode and section 8.5 for details on the settings for the Grid mode.
Voice	Displays the settings dialog to control the parameters for text to speech. See section 8.6
Mute	Displays the settings dialog to set the pin for the Mute screen. See section 8.7.

Menu Option	Description
Size/Position	Gives you the option to set the size of the scanner and also the default position.
Abbreviation	Displays the dialog that let's you add/edit/delete abbreviations. The abbreviations feature lets you define short mnemonics for phrases you would commonly use. For instance, "gm" for "good morning". When you type the mnemonic, ACAT expands it to its corresponding phrase. See section 6.8 for details.

6 FUNCTIONAL FEATURES

ACAT has a number of functional features that help with tasks such as file management, window management, applications management and lecture management. This section details the Functional features of ACAT. These features enable

6.1 The Talk Window

The Talk window enables you to converse. You can enter text into the talk window and have ACAT translate the text to speech.

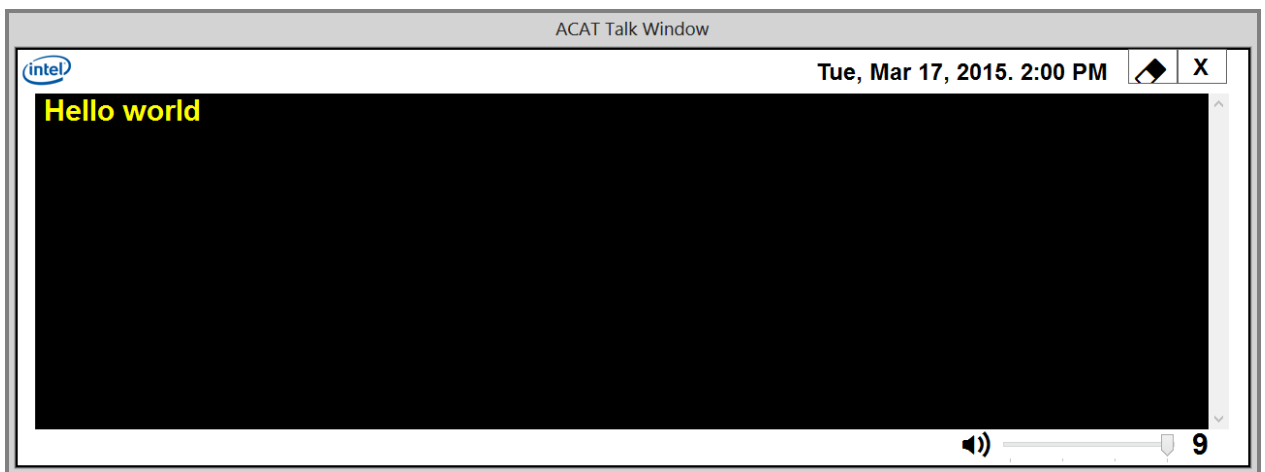



Figure 17: The Talk Window

The Talk window button  in the alphabet scanner toggles the visibility of the Talk window.

6.1.1 Talk Window Features

- Selecting ENTER after entering text will convert the text to speech.
- To repeat what you just typed, select ENTER once more.
- You can type abbreviations and have ACAT either speak them directly or expand them into text (see section 6.8 on creating abbreviations).
- When you press ENTER, if “Dynamic Learning” is enabled (see section 8.3), ACAT will add the text into the learning model for word prediction.

- You can enter a search term in the Talk window and use the contextual menu to do a web search (see section 6.1.2).
- You can control the volume of text-to-speech through the Talk window contextual menu (see section 6.1.4).

6.1.2 Talk Window Contextual Menu

The Talk window contextual menu has the following options.

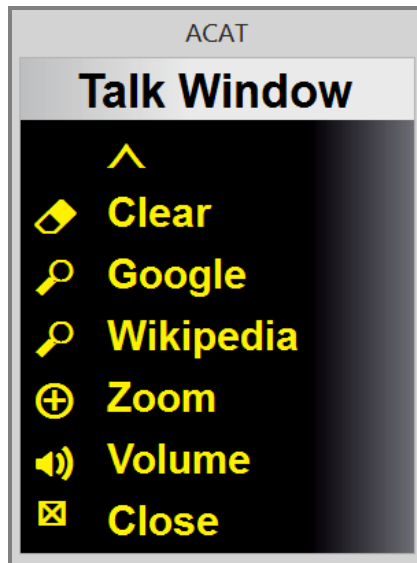


Figure 18: The Talk Window Contextual Menu

Menu Option	Description
^	Exits the menu.
Clear	Clears the text in the Talk window. Confirms with a Yes/No dialog before clearing the text.
Google	Googles for the search term at the caret position in the Talk window

Menu Option	Description
Wikipedia	Searches for the Wikipedia entry for the term at caret position in the Talk window.
Zoom	Displays the Zoom menu to make the Talk window text bigger or smaller. See section 6.1.3.
Volume	Displays the volume settings scanner to set the volume of text-to-speech. See section 6.1.4.
Close	Closes the Talk window.

6.1.3 Talk Window Zoom Menu

You can enlarge or reduce the font size of the text in the Talk window through this menu. You can access this through the Talk window contextual menu (see section 6.1.2).

The Talk window Zoom menu has the following options.

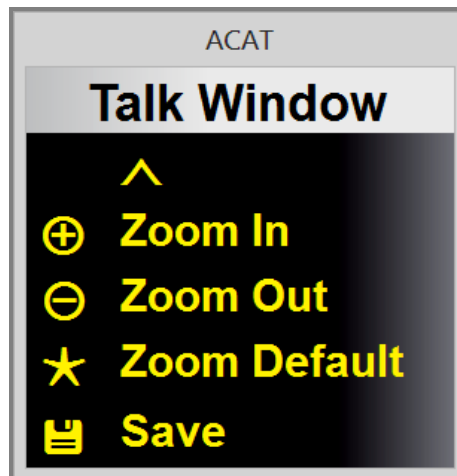


Figure 19: The Talk Window Zoom Menu

Menu Option	Description
^	Exits the menu.
Zoom In	Enlarges the Talk window text.
Zoom Out	Reduces the Talk window text.
Zoom Default	Resets the font size to its default value.
Save	Saves the zoom level.

6.1.4 Volume Settings Scanner

Use the volume settings scanner to set the volume of text to speech. You can open this scanner from the contextual menu of the Talk window (see section 6.1.2)

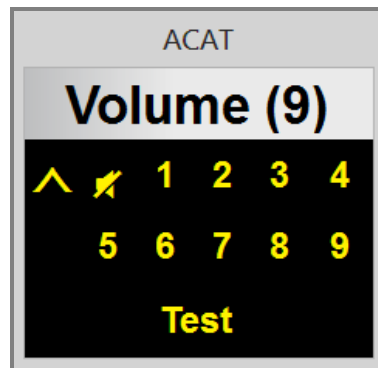





Figure 20: The Volume Settings Scanner

Use your switch to select the volume level from 1 to 9. You can also mute the speaker by selecting the  button.

Select “Test” to test the volume setting. ACAT will speak a canned phrase.

Press the  button to exit the scanner.

6.2 File Browser

You can access the file browser by selecting the file browser button  in the Alphabet scanner. With the file browser, you can open or delete files. It lists files from your “My Documents” folder. When you select a file to open, it launches the application that is associated with the file to open it. For instance, if you open a Microsoft Word file, it will launch Microsoft Word to open the file.

The File browser has two scanners which are docked to each other, as shown in Figure 21.

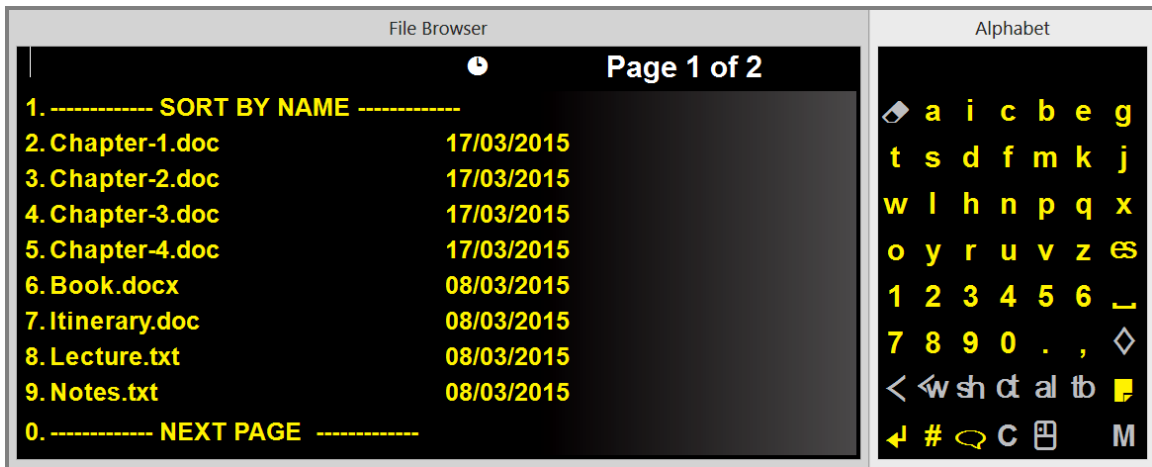


Figure 21: The File Browser

The scanner on the left shows all the files and the scanner on the right is the Alphabet scanner. You can make a selection by selecting the index number (0,1,2,3,..) of the entry from the bottom half of the alphaner scanner. When you select a file, ACAT displays a menu prompting you to select the file operation.

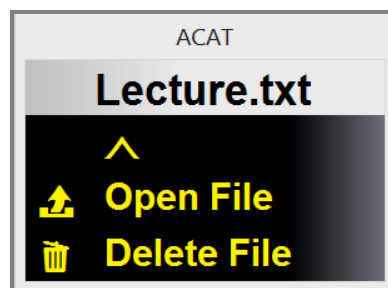





Figure 22: File Operations Menu


If you select “Open File”, ACAT will display a Yes/No confirmation to open the file and then open it if you choose to do so.

If you select “Delete File”, ACAT will display a Yes/No confirmation to delete the file and then delete it if you choose to do so, and then refresh the file list.

The features supported by the file browser are:

Feature	Description
Search Filter	You can use the Alphabet scanner to search for files. Wildcards are not supported. It simply lists all the files that begin with the string you have entered. For instance, if you enter “cha”, ACAT will list all files that begin with “cha”. To clear the search term, select the eraser button  .
Sort	You can toggle the sort order of the files. They can be sorted alphabetically or by date, most recent first. To toggle the sort order, make sure you are on the first page and select the first entry in the list (index 1). Also, the icon in the status bar at the top of the scanner displays the current sort order.
Next/Previous page	You can use the entries with index 1 and index 0 to show the next or previous page of the file list.
Close	To exit the file browser, either select escape  or the file browser icon  in the alphabet scanner.

6.3 Switch Windows

You can switch between the windows of running applications with the “Switch Windows” feature. You can access this feature by selecting the Main Menu  button from the alphabet scanner and then selecting “Switch Win” from the main menu.

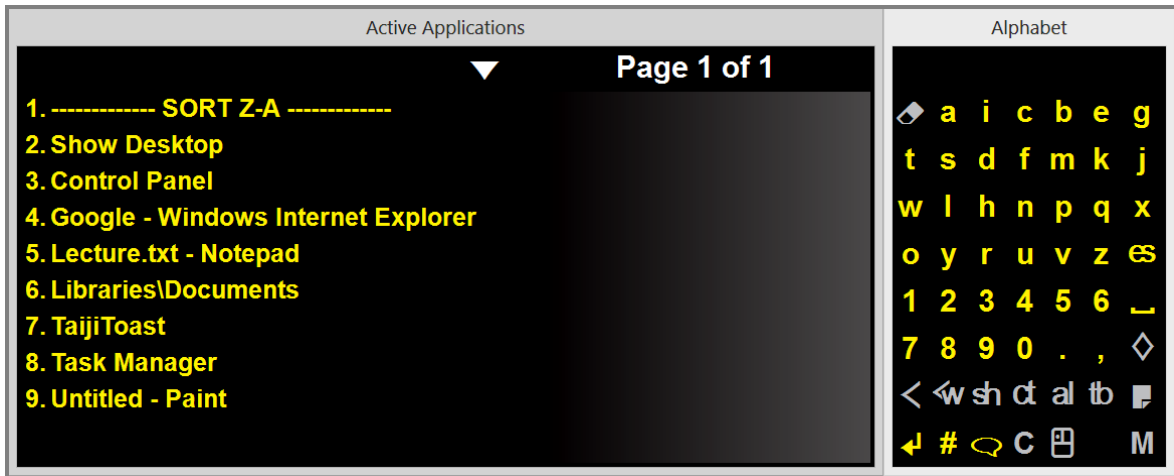




Figure 23: Switch Applications Scanner


The scanner on the left shows the titles of all the active windows and on the right is the Alphabet scanner. You can make a selection by selecting the index number (0,1,2,3,..) of the entry from the bottom half of the alphaner scanner. When you make the selection, ACAT will display a confirmation Yes/No dialog to confirm that you want to switch focus to the selected window. Ater you confirm, Switch Windows exits back to the Alphabet scanner and the window you selected will have focus.

The features supported by “Switch Win” are listed in the table below.

Feature	Description
Search	You can use the Alphabet scanner to narrow down the list of windows. if you enter “out”, ACAT will list all windows whose window titles begin with “Out”. To clear the search term, select the eraser button  .
Sort	You can toggle the sort order of the windows. They can be sorted alphabetically or reverse alphabetically. On the first page of entries, the entry with index 1 can be used to toggle the sort order. Also, the icon in the status bar at the top of the scanner displays the current sort order.

Feature	Description
Next/Previous page:	You can use the entries with index 1 and index 0 to show the next or previous page of the window list.
Close	To exit, select escape 

6.4 Launch Application

You can start applications with this feature. You can access this feature by selecting the Main Menu  button from the alphabet scanner and then selecting “Launch App” from the main menu.

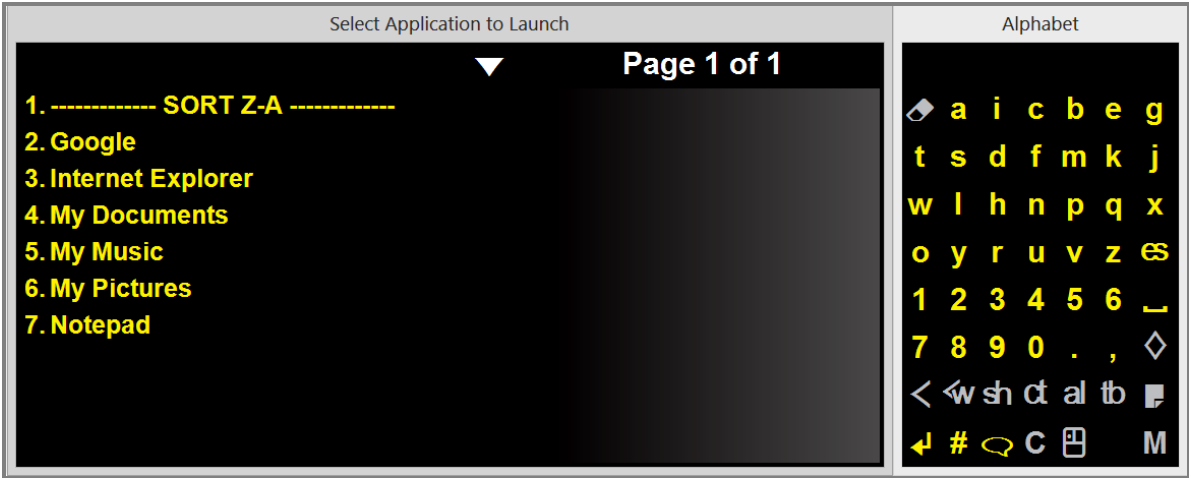





Figure 24: Launch Applications Scanner

The scanner on the left shows the names of applications that can be launched and on the right is the Alphabet scanner.

The features supported by “Launch App” are:

Feature	Description
Search	You can use the Alphabet scanner to narrow down the list of applications. if you enter “exp”, ACAT will list all applications whose window titles begin with “exp”. To clear the search term, select the eraser button  .
Select	You can launch an application by selecting the index number (0,1,2,3,..) of the entry from the bottom half of the alphaner scanner. When you make the selection, ACAT will display a confirmation Yes/No dialog to confirm that you want to launch the selected application. After you confirm, Switch Windows exits back to the Alphabet scanner and the application you selected will launch.
Sort	You can toggle the sort order of the applications. They can be sorted alphabetically or reverse alphabetically. On the first page of entries, the entry with index 1 can be used to toggle the sort order. Also, the icon in the status bar at the top of the scanner displays the current sort order.
Next/Previous page:	You can use the entries with index 1 and index 0 to show the next or previous page of the applications list.
Close	To exit, select escape  .

6.5 New File

You can create new plain text files and Microsoft Word documents with this feature. New File can be accessed by selecting Main Menu  from the alphabet scanner and then selecting “New File.” ACAT will prompt you for the type of file.

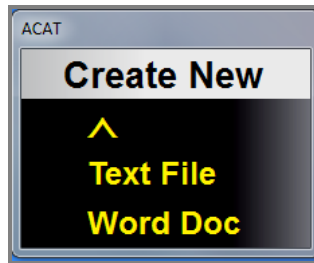



Figure 25: Choose File Type

Clicking on  will take you back to the main menu.

Select “Text File” to create a plain text document or “Word Doc” to create a Word document. Files are created in your “My Documents” folder.

ACAT displays a dialog to enter the filename, and also the Alphabet scanner which you can use to enter the file name.

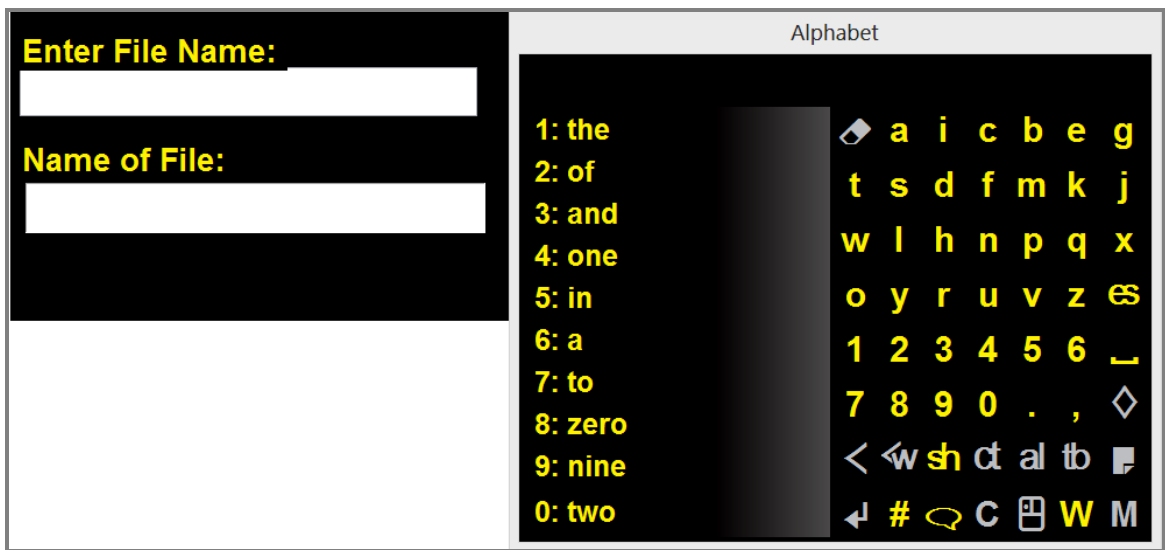


Figure 26: New File Scanner

As you start typing, ACAT will display the name of the file in the ‘Name of File’ field. At the same time, it checks to see if the file already exists. If it does, the file name is displayed in red.

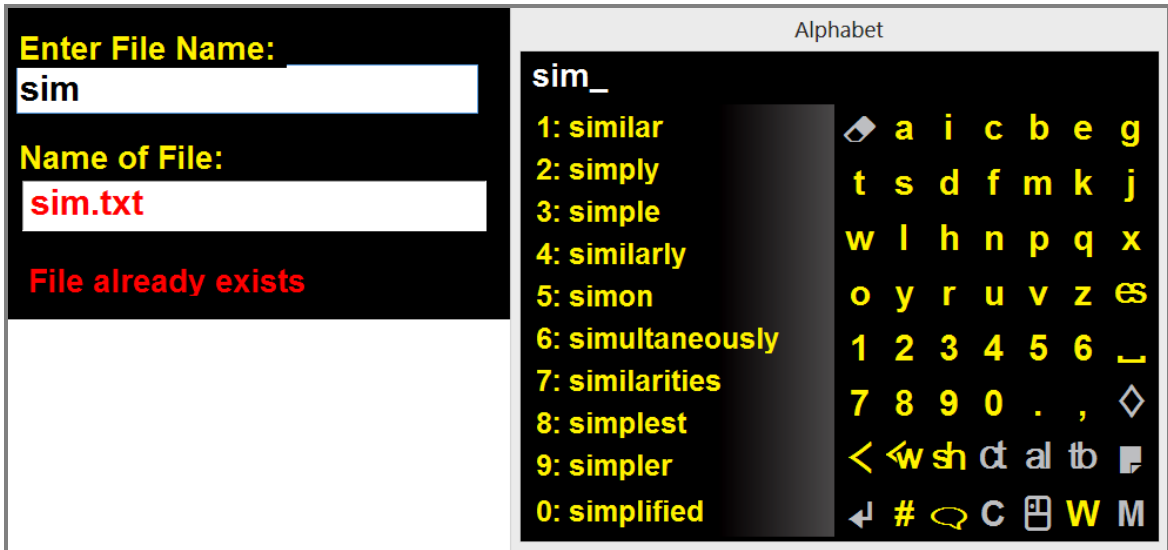


Figure 27: File already exists

If the file does not already exist, the file name is displayed in green.

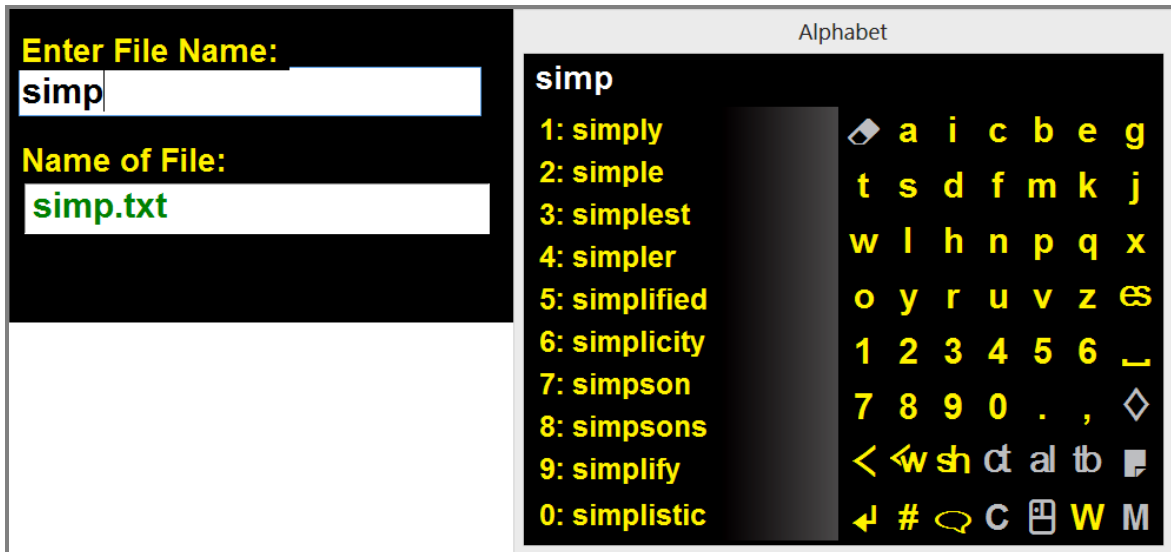





Figure 28: File does not exist

When you are done with entering the file name, press the  ENTER button. ACAT will create the file and launch Notepad with the file if you created a text file or Microsoft Word if you created a Word document.

To exit without creating a file, press the Escape  button

6.6 Lecture Manager

The Lecture Manager feature enables you to deliver lectures or speeches. The lecture is loaded from a plain text file or from a Word document. ACAT then converts the text to speech. You can pace the lecture by having ACAT pause at the end of a sentence or a paragraph. You can activate your switch to start speaking the next sentence or paragraph.

Lecture Manager can be accessed by selecting Main Menu  from the alphabet scanner and then selecting Lecture Mgr. ACAT first displays the File Browser (see section 6.2) to select the name of the file. Only plain text files (*.txt) and Word documents (*.doc, *.docx) are displayed in the list. Select the name of the file as described in section 6.2. ACAT displays the file in the Lecture Manager window which is docked with a scanner.

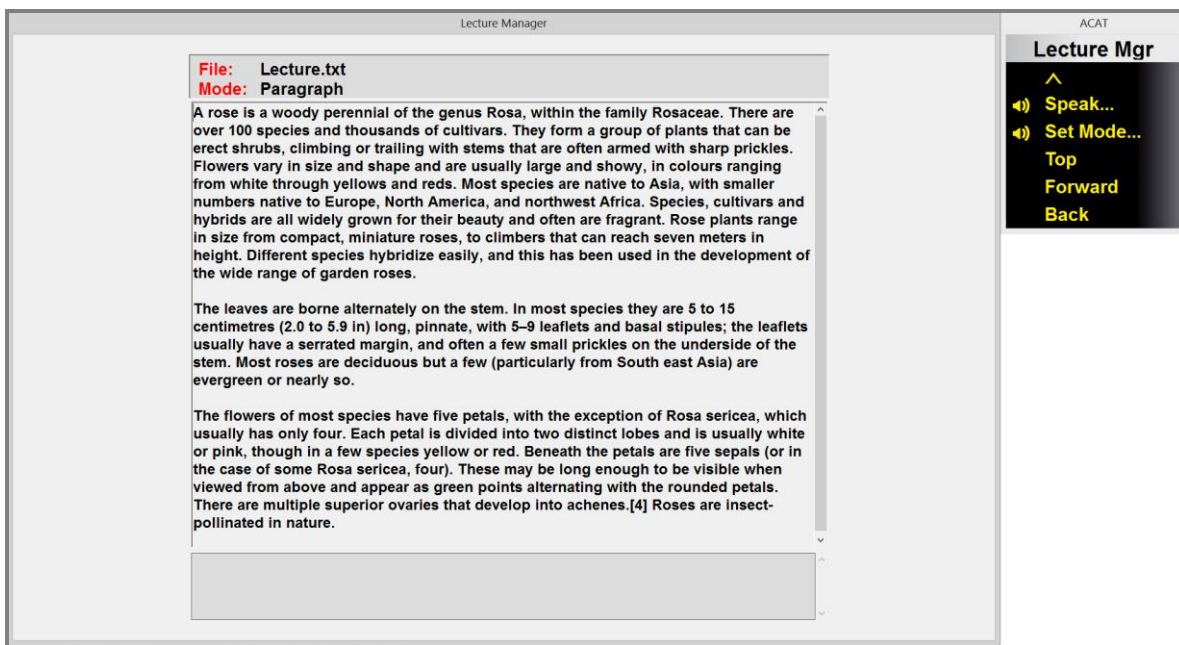



Figure 29: The Lecture Manager Main Window with Docked Scanner

The menu alongside the Lecture Manager main window helps you navigate through the lecture, set the lecture mode and begin speaking.



Figure 30: Lecture Manager Main Menu

Option	Description
	Exits the Lecture Manager
Speak	Begins the lecture (see section 6.6.2)
Set Mode	Lets you select the unit of speech – by sentence, by paragraph or ‘all’ which is the entire lecture. See section 6.6.1.
Top	Goes to the top of the lecture file
Forward	Navigates forward to the next unit – sentence or paragraph, depending on the mode. The sentence or paragraph is highlighted in the lecture manager window.
Back	Navigates backward to the previous unit - sentence or paragraph, depending on the mode. The sentence or paragraph is highlighted in the lecture manager window.

6.6.1 Speech/Navigation Mode

Use the 'Set Mode' option in the Lecture Manager main menu to select the unit of speech or navigation. When you select this option, ACAT will display the following menu.

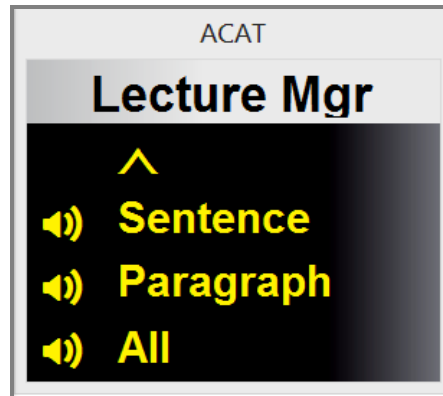


Figure 31: Lecture Manager Navigation Mode Menu

Sentence: If you select the “Sentence” mode, you can navigate and deliver the lecture by sentence. When the lecture is being delivered, ACAT will pause speaking at the end of every sentence. You must use your switch to begin speaking the next sentence. This gives you greater control over the pace of the lecture.

Paragraph: If you select the “Paragraph” mode, you can navigate and deliver the lecture by paragraph. When the lecture is being delivered, ACAT will pause speaking at the end of every paragraph. You must use your switch to begin speaking the next paragraph. This gives you greater control over the pace of the lecture.

All: If you select “All”, ACAT will deliver the entire lecture without pausing.

6.6.2 Speak

When you select “Speak” from the Lecture Manager contextual menu, ACAT displays a Yes/No dialog to confirm speaking. If you select “Yes”, it starts speaking. The current sentence being spoken is highlighted.

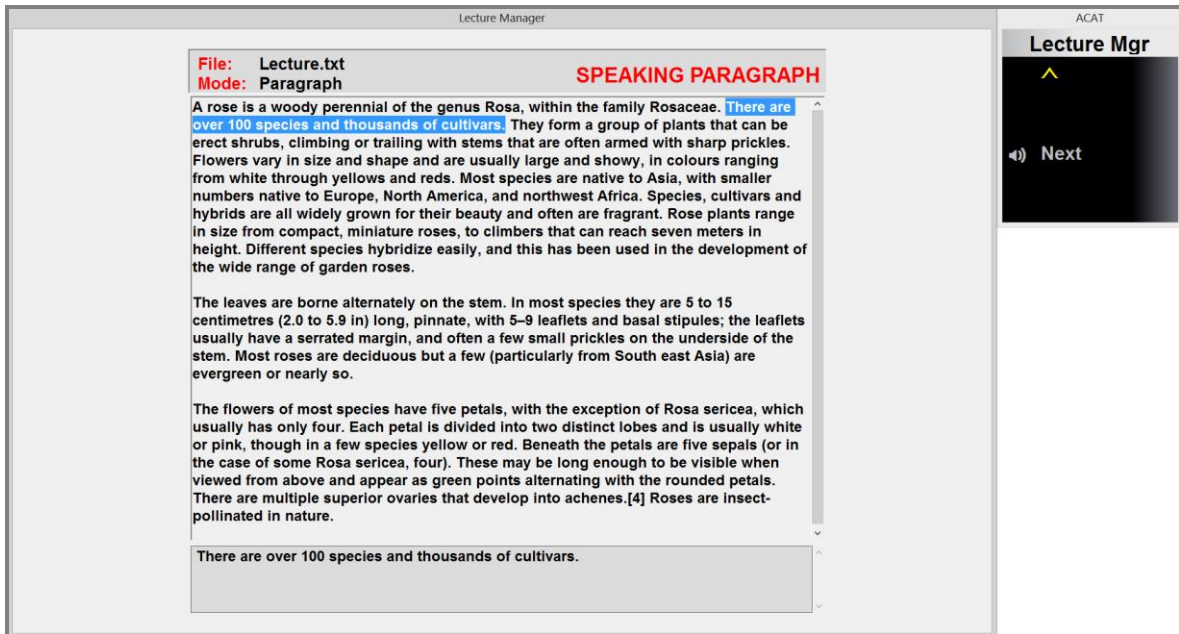


Figure 32: Delivering the Lecture

You must select the Next button to begin speaking. Depending on the Speech Mode (see section 6.6.1), the top of the window either displays “Speaking Paragraph” or “Speaking Sentence”.

You can stop speaking any time by selecting . ACAT will confirm that you want to stop and take you back to the Lecture Manager main menu.

6.7 Mute

You can use the Mute screen to absorb inadvertent activations of your switch mechanism. If you are using a cheek switch, or a facial gesture recognition switch, it could trigger when you are engaged in activities such as eating. Instead of turning off the switch, you could use the Mute feature.

The Mute screen covers your entire display and displays pin that you must enter using your switch to unlock the screen. You can set the number of digits in the pin as well as the pin itself through the Mute Settings dialog (see section 8.7).



Figure 33: The Mute Screen

6.8 Abbreviations

You can create abbreviations and have ACAT expand them when you are entering text. ACAT supports two modes of expansion – written and spoken. In the written mode, the abbreviations are expanded in place in the text window. In the spoken mode, when you enter an abbreviation, ACAT deletes it and then does a text to speech conversion of the expansion. For instance, if you have an abbreviation “asap” and you want this expanded to the phrase “as soon as possible”, you would first map the phrase to “asap” to the phrase. When you enter “asap” in any window, ACAT will automatically expand it to the corresponding phrase. If you specified the mode of expansion as “written”, it would do an in-place replacement of “asap” with the expansion. If you specified the mode as “spoken”, it would speak the expansion.

To add/edit/delete abbreviations, choose “Abbreviations” from the “Settings” menu (see section 5.3). This will display the Abbreviations scanner.

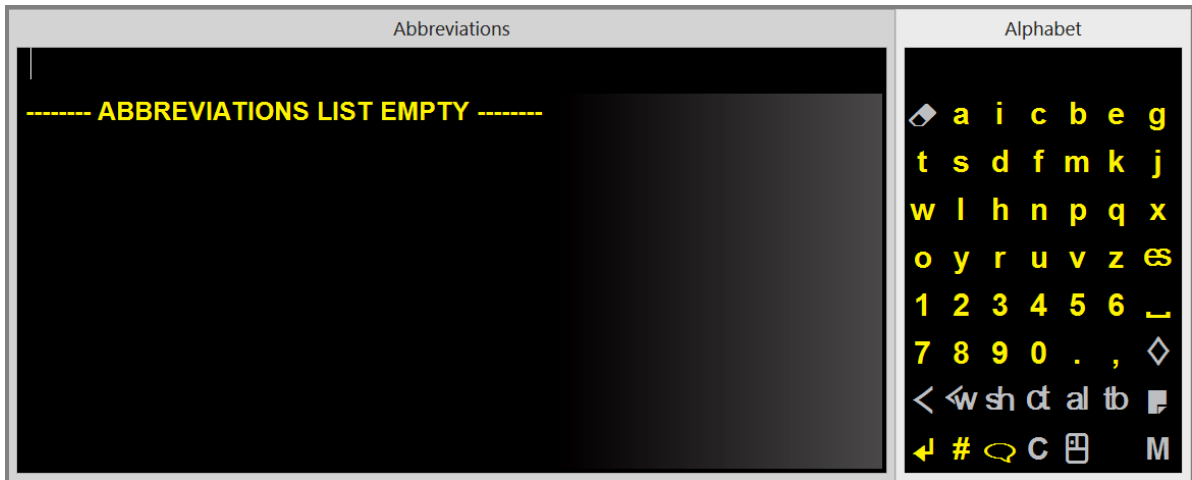


Figure 34: Abbreviations Scanner, Abbreviations list empty

6.8.1 Add an abbreviation

To add an abbreviation, use the Alphabet scanner and type the acronym, say, asap. The acronym is displayed in the abbreviations scanner. To add the expansion for this, select 1 from the first row in the lower half.

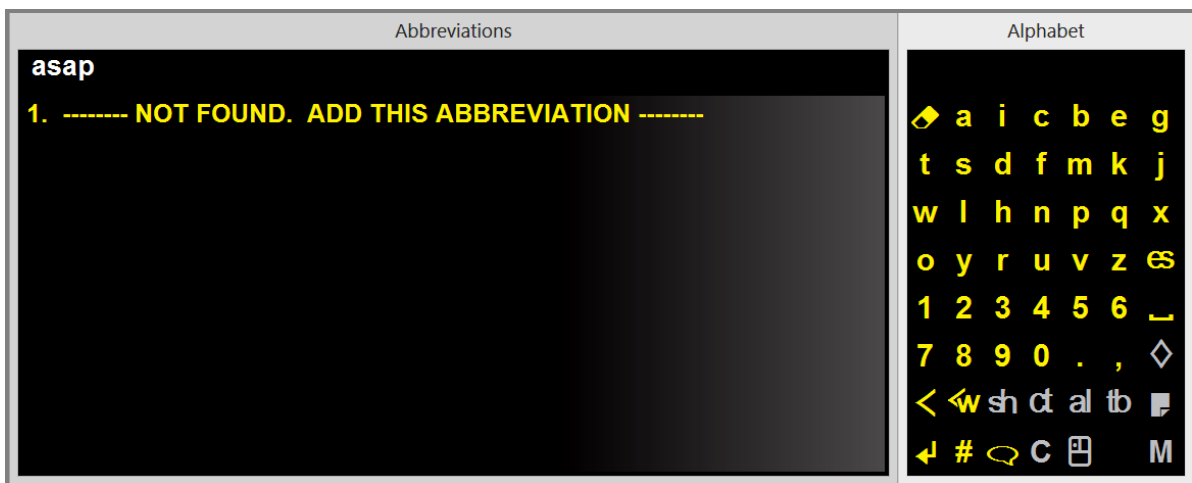


Figure 35: Enter the abbreviation to add

ACAT will display a Yes/No dialog to confirm adding the abbreviation and then display a dialog where you can enter the expansion and also select the abbreviation mode – written or spoken.

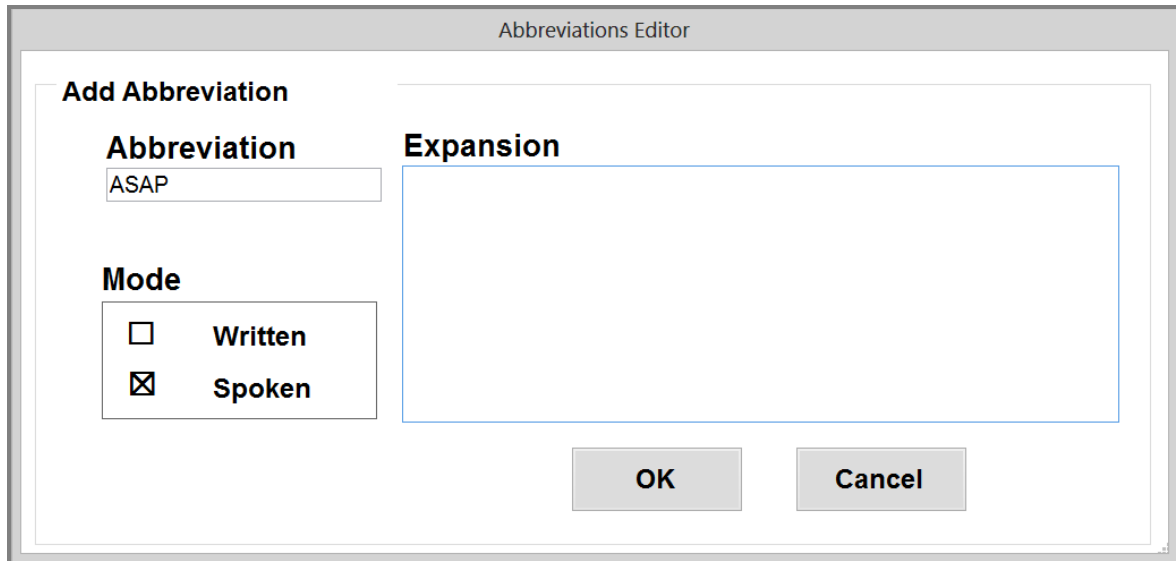



Figure 36: Abbreviations Editor to add an abbreviation

ACAT will scan the controls in this dialog box. To make changes to a control, activate your switch when the control is highlighted. For instance, to change the Mode, activate your switch when the Mode box is highlighted.

To enter text into the Expansion text box:

1. Activate the switch when the Expansion box is highlighted.
2. ACAT will display the Alphabet scanner. Enter the expansion
3. Select the  escape button from the Alphabet scanner when you are done and ACAT will resume scanning.
4. Select OK to indicate you are done, or Cancel if you want to discard changes.

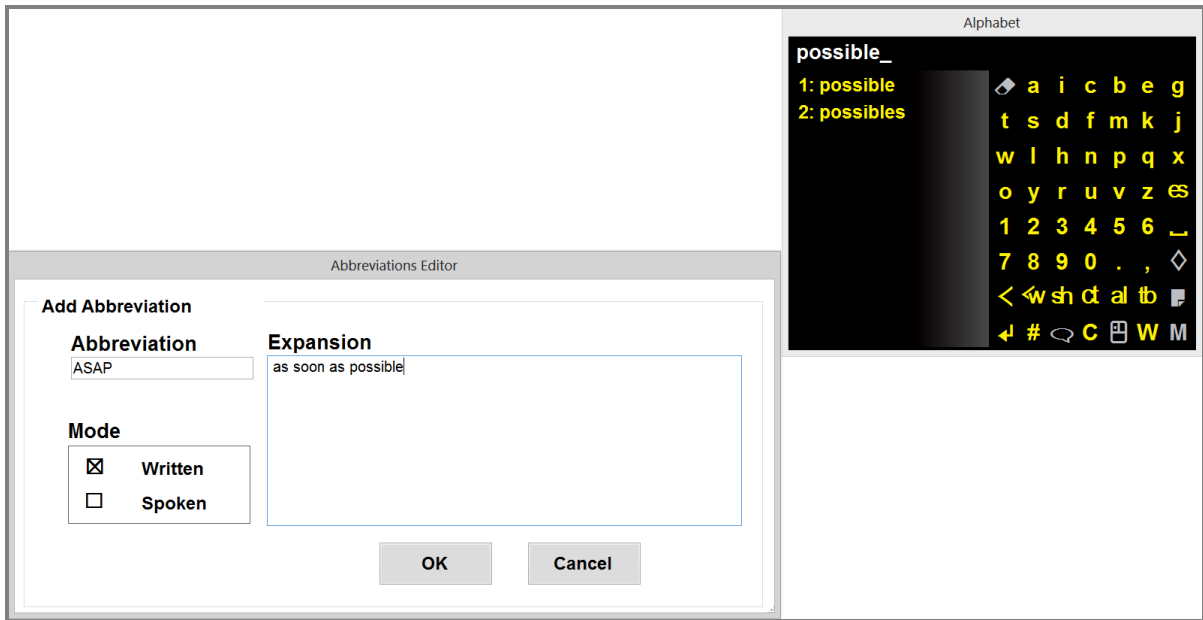


Figure 37: Enter the expansion for the abbreviation

When you exit this dialog, ACAT will take you back to the abbreviations scanner. You will see the new abbreviation you just added.

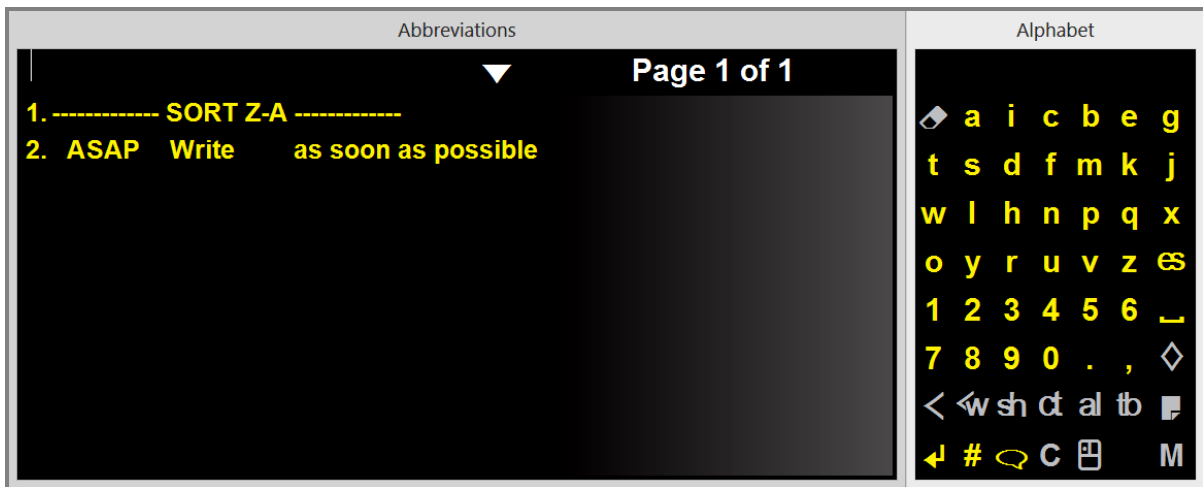


Figure 38: New abbreviation added

6.8.2 Edit/Delete an abbreviation

The abbreviations scanner will list all the abbreviations you have added. You can search for abbreviations by typing it out and ACAT will narrow the list down to those

that match your search term. You can edit an existing abbreviation by selecting it from the abbreviations scanner using the index number of the abbreviation. ACAT will display a menu confirming whether you want to Edit or Delete the abbreviation.

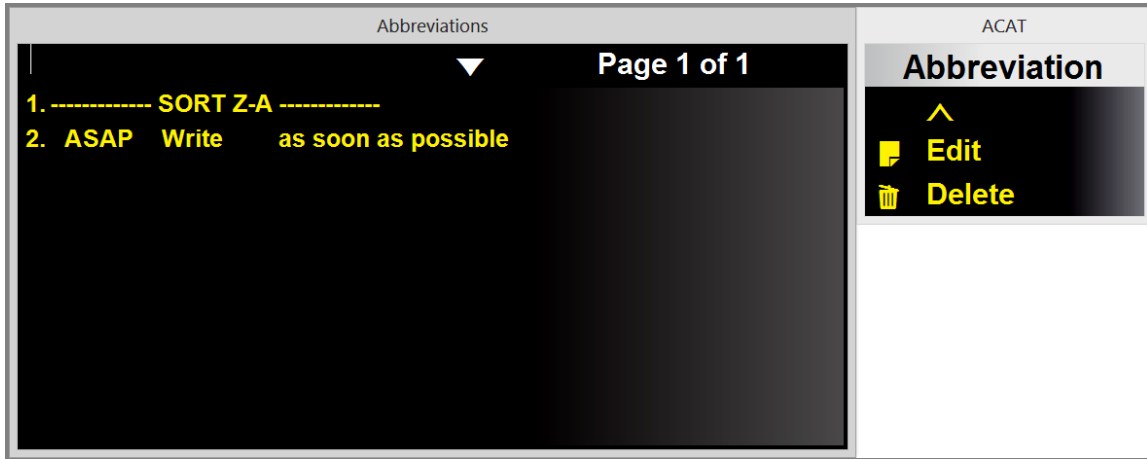


Figure 39: Select Abbreviation Operation

If you select “Edit”, ACAT will display the abbreviations editor dialog and you can edit and save the information in there as described in section 6.8.1.


If you select “Delete”, ACAT will delete the selected abbreviation.

7 APPLICATIONS SUPPORT

This section has details on how you can use ACAT to interact with and manage applications such as Notepad, Internet Explorer and Microsoft Word.

Support for applications is provided through:


Contextual Next-Word Prediction: For applications such as Notepad or Microsoft Word, ACAT is aware of where the caret is in the document, can read the text preceding the caret and use the context to do next-word prediction. You can move the caret to anywhere in the document and ACAT will track the caret position and update the word prediction list. In addition, ACAT will also enhance the word prediction model by feeding it text from the active document. This makes word prediction more relevant to the document you are editing.

Contextual Menus: Application-aware contextual menus. You can activate the contextual menu by selecting the  button in the alphabet scanner. If you are interacting with Internet Explorer for instance, the contextual menu would have options to go Back, Forward, Search, Zoom etc.

You can launch application using the Launch App feature covered in section 6.4.

You can also switch to any application window using the Switch App feature covered in section 6.3.

7.1 Managing Application Windows

The Window menu in the alphabet scanner enables you to move, resize and close the currently active window of the application you are interacting with. You can access this by selecting the  button in the alphabet scanner.

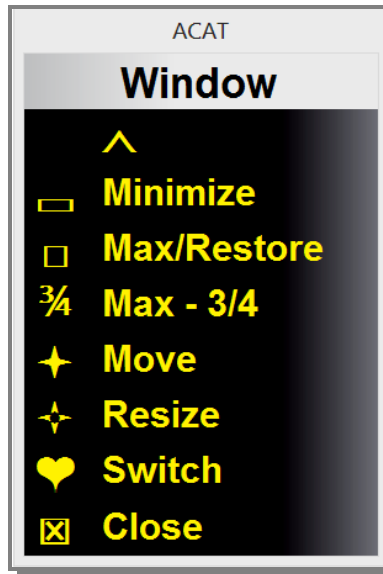










Figure 40: Window Management Menu

Button	Description
	Exits the menu
	Minimizes the active application window
	Toggles the active application window between Maximize and Restore
	Toggles the active application window between full Maximize and partial maximize, where the window occupies three-quarters of the display. Use this option for optimizing the real estate on the screen between the application window and the ACAT scanner.
	Lets you position the active application window to any desired location the screen. See section 7.1.1 on the interaction to accomplish this.



Button	Description
	Lets you resize the active application window. See section 7.1.2 on the interaction.
	Displays a list of active applications and lets you switch focus to any application that is running. This is equivalent to using Alt-Tab. See section 6.3 on switching windows.
	Closes the active application window. Displays a red rectangle outlining the window and gets your confirmation before closing the window.

7.1.1 Moving Application Windows

When you select Move from the Window menu, ACAT displays a small window in the middle of the screen.



Figure 41: Move Application Window Dialog

1. You must first select the direction in which you want to move the window – up, down, left or right
2. After you have selected the direction, you can repeatedly activate your switch and the window will continue to move in the selected direction for each activation of the switch. When you are done, you must select the ENTER button  to confirm.
3. Select the  button to exit. If you do not press the ENTER button, ACAT will restore the original position of the window.

7.1.2 Resizing Application Windows

Resizing windows is similar to the move operation described in section 7.1.1. When you select Resize from the Window menu, ACAT displays a small window in the middle of the screen.

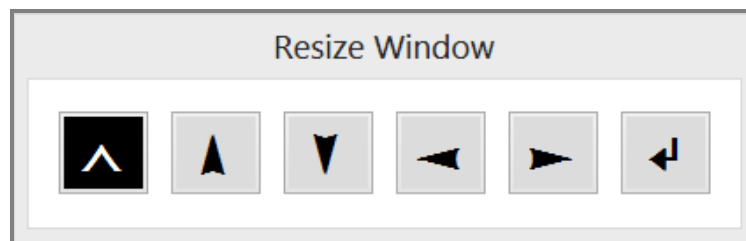






Figure 42: Resize Window Dialog

1. You must first select which edge you want to move to resize the window – the top edge, bottom edge, left edge or the right edge. Use your switch to select one of the arrow buttons to select the edge.
2. Depending on the edge you have selected, the windows cursor will change to a  or a . Now you can repeatedly activate your switch and for every activation, the window edge will move in the selected direction. When you are done, you must select the ENTER button  to confirm.
3. Select the  button to exit. If you do not press the ENTER button, ACAT will restore the original size of the window.

7.1.3 Switch between Applications

You can use the “Switch Apps” feature to switch focus to a different window. Section 6.3 has details on this feature.

7.1.4 Launch Applications

You can use the “Launch App” feature to launch applications. Section 6.4 has details on this.


7.2 Handling Application Dialogs

If the active application displays a dialog, ACAT automatically displays a contextual menu to facilitate navigation through the dialog and making selections.

The contextual menu for application dialog has the following options.



Figure 43: Application Dialog Contextual Menu

Option	Description
	Exits the menu
Enter	The ENTER key. Used to confirm and dismiss the dialog.
Escape	The ESCAPE key. Used to cancel and dismiss the dialog
Tab	The Tab key. Tab to the next field in the dialog
Shift Tab	The Shift+Tab key. Tab to the previous field in the dialog
Up	The Up arrow. Can be used to navigate lists, combo boxes.

Option	Description
Down	The Down arrow. Can be used to navigate lists, combo boxes.
Space	The Space bar. Can be used to activate a button in the dialog box.


7.3 Handling Application Menus

If you activate a menu in the active application, ACAT automatically displays a contextual menu to facilitate navigation through the application menu and making a selection.

The contextual menu has the following options.



Figure 44: Application Menus Contextual Menu

Option	Description
	Exits the menu

Option	Description
Up	The UP arrow. Goes up one item in the menu
Down	The DOWN arrow. Goes down one item in the menu
Select	The ENTER key. Selects the currently highlighted menu item. If the menu is multi-leveled, opens the next level of the menu.
Escape	The ESCAPE key. Dismisses the menu. If the menu is multi-leveled and you are in the second level or higher, takes you back to the previous level
Close	Dismisses the menu.

7.4 Notepad

ACAT supports contextual word prediction for Notepad (see section **Error! Reference source not found.**). When you type or navigate the cursor around the document, ACAT monitors the caret position and uses the words preceding the caret for next word prediction.

The contextual menu for Notepad has the following options:

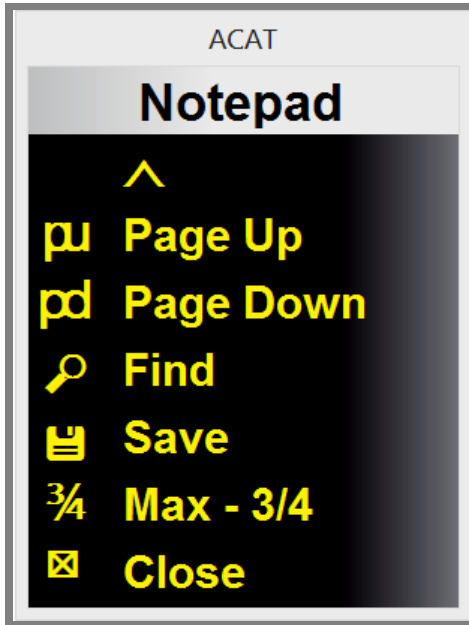



Figure 45: Contextual Menu for Notepad

Option	Description
	Exits the menu
Page Up	Scrolls up one page
Page Down	Scrolls down one page
Find	Displays the Notepad “Find” window to search for text.
Save	Saves the file
Max – ¾	Toggles the Notepad window between full maximize and partial maximize.

Option	Description
Close	Closes the Notepad application window

7.5 Wordpad

ACAT supports contextual word prediction for Wordpad (see section **Error! Reference source not found.**). When you type or navigate the cursor around the document, ACAT monitors the caret position and uses the words preceding the caret for next word prediction.

The contextual menu for Wordpad has the following options:

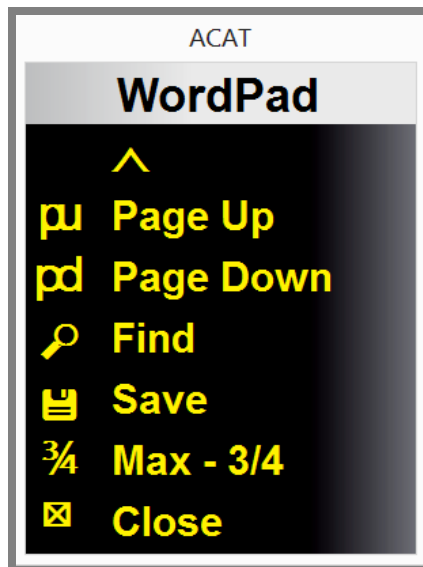



Figure 46: Contextual Menu for WordPad

Option	Description
	Exits the menu
Page Up	Scrolls up one page

Option	Description
Page Down	Scrolls down one page.
Find	Displays the WordPad “Find” window to search for text.
Save	Saves the file.
Max - $\frac{3}{4}$	Toggles the Wordpad window between full screen maximize and partial maximize.
Close	Closes the Wordpad application window

7.6 Microsoft Word

ACAT supports contextual word prediction for Microsoft Word (see section **Error! Reference source not found.**). When you type or navigate the cursor around the document, ACAT monitors the caret position and uses the words preceding the caret for next word prediction.

The contextual menu for MS Word has the following options:

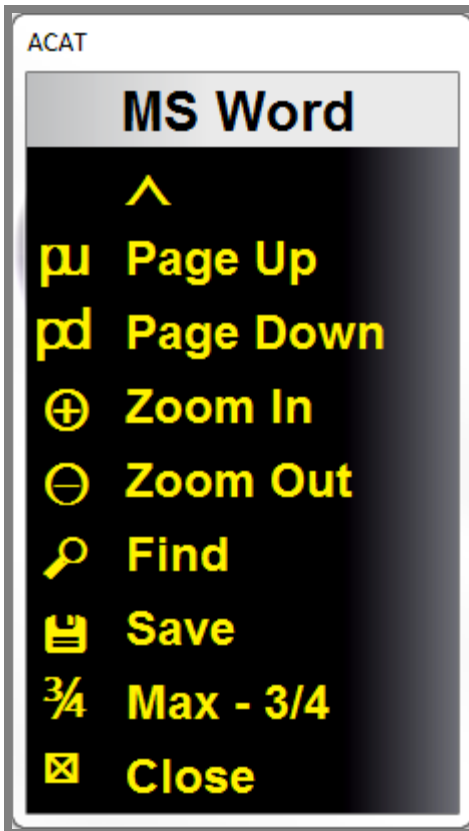



Figure 47: Contextual Menu for Microsoft Word

Option	Description
	Exits the menu
Page Up	Scrolls up one page
Page Down	Scrolls down one page
Zoom In	Zooms In


Option	Description
Zoom Out	Zooms out
Find	Displays MS Word's Find dialog to search for text.
Save	Saves the file.
Max - ¾	Toggles the Notepad window between full screen maximize and partial maximize.
Close	Closes the Notepad application window

7.7 Acrobat Reader

If you are viewing a PDF file with Acrobat Reader, ACAT displays the contextual menu for Acrobat which allows you to page through the document, set the zoom level, and search for text



Figure 48: Contextual Menu for Acrobat Reader

Option	Description
	Exits the menu
Page Up	Scrolls up one page
Page Down	Scrolls down one page
Zoom	Displays the Zoom menu (see below)
Max - $\frac{3}{4}$	Toggles the Acrobat Reader window between full screen maximize and partial maximize.
Close	Closes the Acrobat Reader window

The Zoom menu enables you to to set the zoom level of the document.

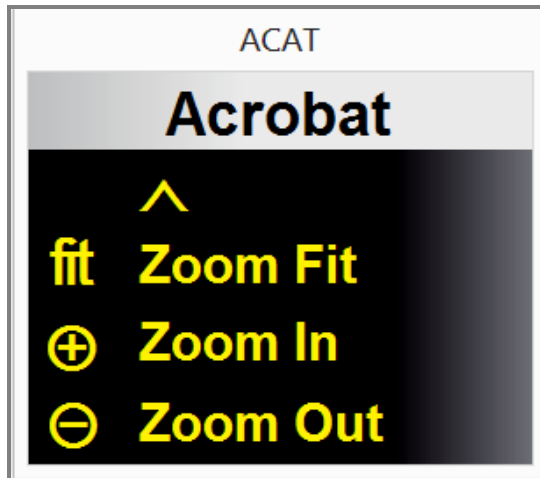



Figure 49: Acrobat Reader Zoom Menu

Option	Description
	Exits the menu
Zoom Fit	Fits the page to fit the window.
Zoom In	Zooms in
Zoom Out	Zooms out

7.8 Internet Explorer

The contextual menu for Internet Explorer includes options to facilitate browsing.

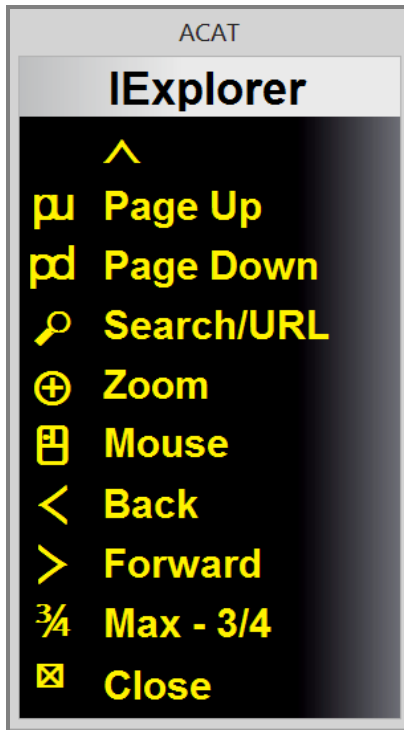



Figure 50: Contextual Menu for Internet Explorer

Option	Description
	Exits the menu
Page Up	Scrolls up one page
Page Down	Scrolls down one page
Search/URL	Positions the caret in the address bar so you can type a url or a search term
Zoom	Displays the Zoom menu (see below)

Option	Description
Mouse	Displays the Mouse scanner (see section 4.5). You can use the mouse scanner to click the mouse on hyperlinks in the page you are browsing.
Back	Goes back to the previous web page
Forward	Goes forward to the next web page
Max - $\frac{3}{4}$	Toggles the Acrobat Reader window between full screen maximize and partial maximize.
Close	Closes the Internet Explorer window

You can use the Internet Explorer Zoom menu to control the zoom level of the web page you are browsing.

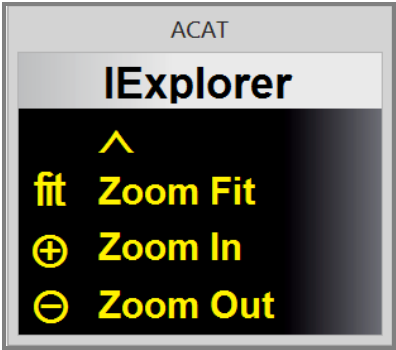



Figure 51: Internet Explorer Zoom Menu

Option	Description
	Exits the menu

Option	Description
Zoom Fit	Fits the page to fit the window.
Zoom In	Zooms in
Zoom Out	Zooms out

7.9 Chrome Browser

The contextual menu for the Chrome Browser includes options to facilitate browsing.

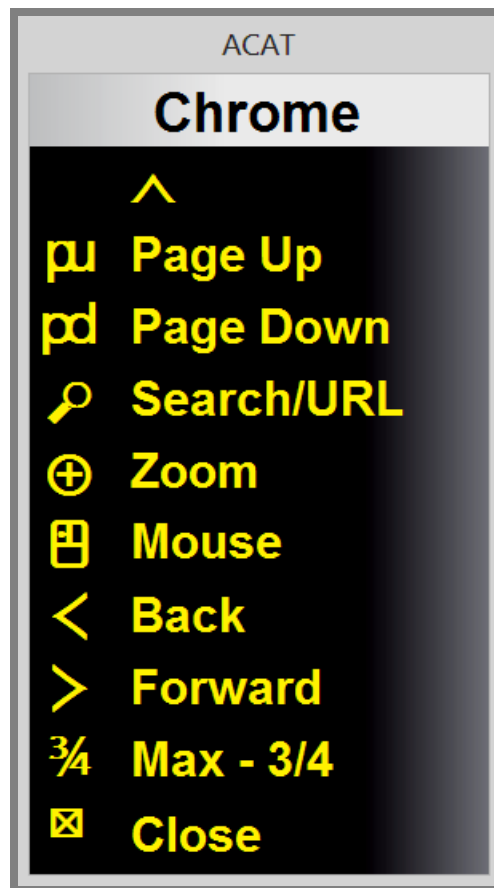



Figure 52: Contextual Menu for the Chrome Browser

Option	Description
	Exits the menu
Page Up	Scrolls up one page
Page Down	Scrolls down one page
Search/URL	Positions the caret in the address bar so you can type a url or a search term
Zoom	Displays the Zoom menu (see below)
Mouse	Displays the Mouse scanner (see section 4.5). You can use the mouse scanner to click the mouse on hyperlinks in the page you are browsing.
Back	Goes back to the previous web page
Forward	Goes forward to the next web page
Max - $\frac{3}{4}$	Toggles the Chrome browser window between full maximize and partial maximize.
Close	Closes the Chrome browser window

You can use the Chrome Browser Zoom menu to control the zoom level of the web page you are browsing.

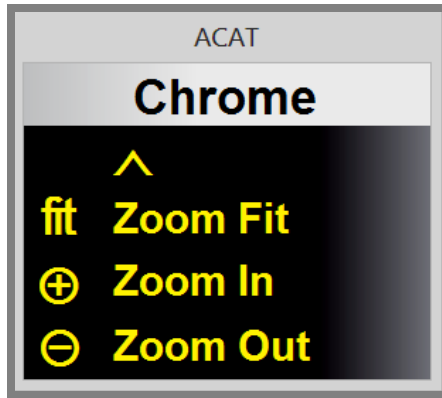



Figure 53: Chrome Browser Zoom Menu

Option	Description
	Exits the Zoom menu
Zoom Fit	Fits the page to fit the window.
Zoom In	Zooms in
Zoom Out	Zooms out

7.10 Windows Photo Viewer

If you are using Windows Photo viewer to view pictures, you can use the contextual menu to browse and manage your pictures.

The contextual menu for the Photo Viewer has the following options.

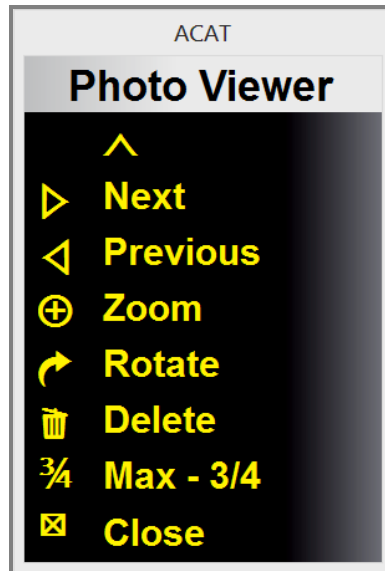



Figure 54: Contextual Menu for Windows Photo Viewer

Option	Description
	Exits the Photo Viewer menu
Next	Displays the next picture
Previous	Displays the previous picture
Zoom	Displays the zoom menu (details below)
Rotate	Displays the rotate menu (details below)
Delete	Deletes the picture you are currently viewing. Confirms with a Yes/No dialog before deleting

Option	Description
Max - ¾	Toggles the Photo viewer window between full maximize and partial maximize.
Close	Closes the Photo viewer.

Use the Zoom menu to control the zoom level of the picture you are viewing.

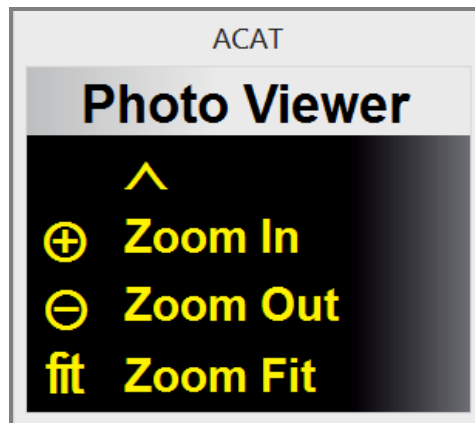



Figure 55: Zoom Menu for Windows Photo Viewer

Option	Description
	Exits the zoom menu
Zoom In	Zooms in the picture
Zoom Out	Zooms out the picture
Zoom Fit	Fits the picture in the window

Use the Rotate menu to rotate the picture.

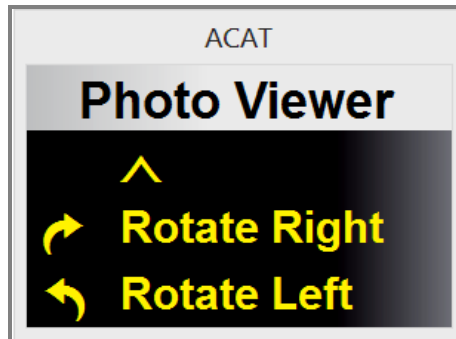



Figure 56: Rotate Menu for Windows Photo Viewer

Option	Description
	Exits the rotate menu
Rotate Right	Rotates the picture 90 degrees clockwise
Rotate Left	Rotates the picture 90 degrees counter-clockwise

8 ACAT SETTINGS

You can configure ACAT through the Settings dialogs. You can access them by selecting Main Menu **M** from the alphabet scanner and then selecting “Settings” from the main menu.

8.1 General Settings Dialog

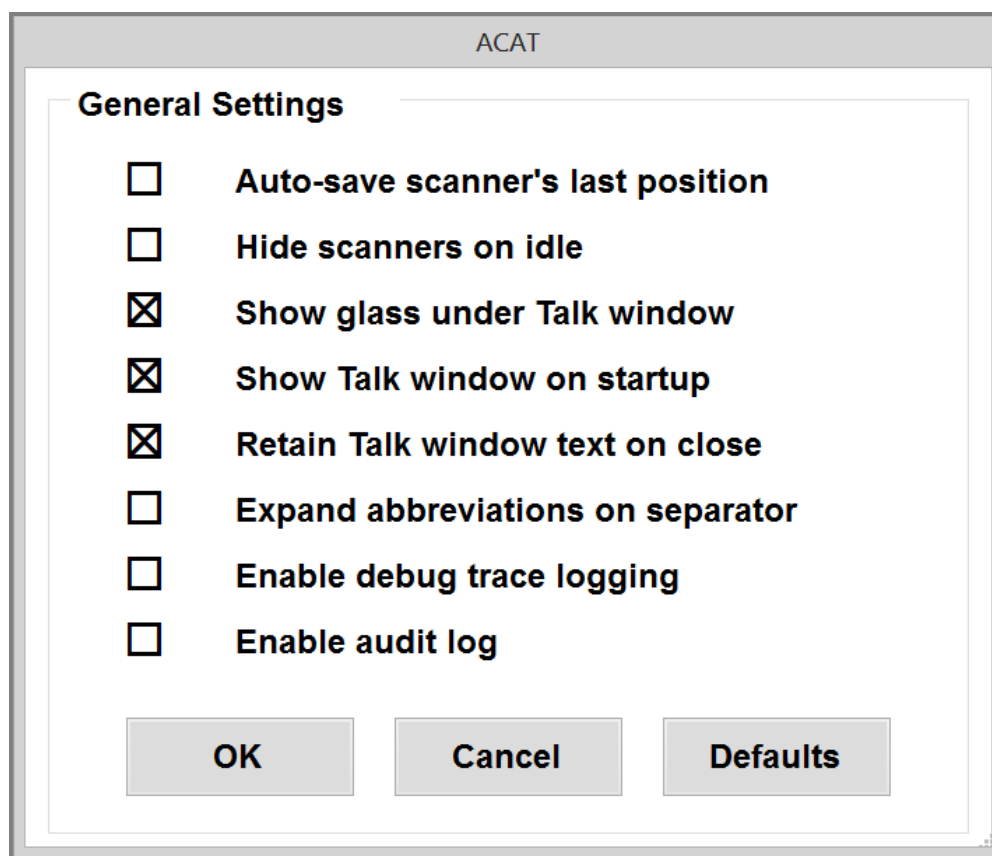


Figure 57: ACAT General Settings Dialog

To toggle a setting, activate your switch when the setting is highlighted.

Setting	Description
Auto-save scanner's last position	The default position for all scanners is the top right corner of the display. You can move the scanner position to one of the other corners from the Mouse scanner (see section 4.5) or from the Size/Position option in the Settings menu (see section 8.8). Toggle this setting on to save the scanner position permanently.
Hide scanners on idle	Toggle this setting on to auto-hide the scanners if they have been idle for a while. ACAT will automatically display the scanner when you activate your switch.
Show glass under the Talk window	Toggle this setting on to display a translucent glass over the desktop behind the talk window. The glass is displayed only when the talk window is active.
Show Talk window on startup	Toggle this setting on to always show the Talk window when the ACAT application starts up.
Retain Talk window text on close	Toggle this setting on to retain the contents of the talk window when it is closed. When you activate the talk window again, the text is restored. If this setting is turned off, ACAT will automatically clear the contents of the talk window when you close it.
Expand abbreviations on separator	If this setting is turned on, ACAT will expand abbreviations only if you press a space or a sentence terminator after you type an abbreviation. If you turn it off, ACAT will expand the abbreviation as soon as you type the last letter in the abbreviation. For details on abbreviations, see section 6.8.

Setting	Description
Enable debug trace logging	You would normally leave these settings turned off. They should be turned on only for troubleshooting to report problems. Note: Turning this on could affect performance. Also, ACAT logs all the messages to a files and if not deleted, will consume disk space.
Enable audit log	

8.2 Scan Settings Dialog

The Scan Settings dialog configures the timing of the scanners, and also how many times the highlight iterates through the elements in the scanner.

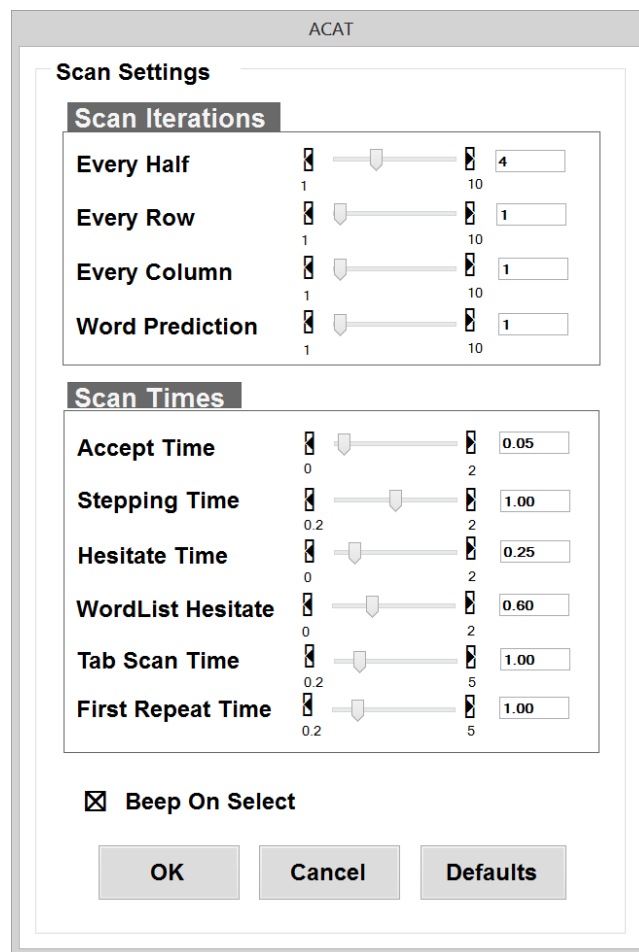


Figure 58: ACAT Scanner Settings Dialog

To change a setting, activate your switch when the setting is highlighted. ACAT will scan the right and left arrows on the slider. Activate the switch to change values. When you have the desired value, stop triggering.

8.2.1 Scan Iteration Settings

These settings control how many times the scanner will scan the portion of scanning section.

Setting	Description
Every Half	Some scanners such as the Alphabet scanner have two halves – top and bottom which are highlighted alternatively. This setting controls how many times the halves will be scanned.
Every Row	Controls how many times the rows in a half will be scanned.
Every Column	Controls how many times the buttons in a row are scanned.
Word Prediction	Not used currently

8.2.2 Scan Time Settings

These settings control the scan timings of the scanners. You may want to tweak these settings to speed up or slow down the timings depending on your switch. Note that speeding up the timings could have an adverse effect on the accuracy as the likelihood of making incorrect selections increase.

Setting	Description
Accept Time	<p>This is the length of time your switch should be held down in order for ACAT to recognize it as a valid trigger event. For instance, if you are using a button switch as a trigger, and this setting is set to 0.2, you must hold the button down for at least 200 ms for a trigger event to activate. Setting this to too low a value will result in a large number of false positives.</p>
Stepping time	<p>The length of time each element stays highlighted while scanning. This applies to scanners only. Timings for menus and dialogs are controlled by Tab Scan time.</p>
Hesitate time	<p>The additional length of time the first element stays highlighted. The value is added on to the Stepping time. Selecting the very first element in a box, or a row can be challenge as you may have to activate your switch in quick succession. Hesitate time gives you an additional delay for the first element to give you enough time to select it. If the stepping time for instance is set to 1 second and Hesitate time is set to 0.25, the first element in a scanner will stay highlighted for 1.25 seconds.</p>
Wordlist Hesitate	Not used
Tab Scan Time	<p>Length of time each element stays highlighted in menus and dialogs.</p>

Setting	Description
First Repeat Time	Some buttons have a 'repeat' behavior. Even after you select them, they stay highlighted for an additional length of time to give you an opportunity to select them again with your switch. This applies to the navigation keys for instance. If you select a down arrow to go to the next line, it is quite likely you may want to keep the down arrow pressed. The First Repeat time gives you the additional time to continue selecting the same button. This is analogous to keeping a key pressed on a physical keyboard.
Beep on select	Toggle this on to play an audio beep every time a trigger event is detected from your switch.
OK	Select "OK" to close the dialog. ACAT will prompt you with a Yes/No confirmation to save the settings. If you choose "Yes", the settings will be permanently saved.
Cancel	Select "Cancel" to close the dialog and discard changes.
Defaults	Select "Defaults" to restore Factory default settings.

8.3 Word Prediction Settings Dialog

The ACAT word predictor suggests words based on context from the previous words in the sentence. It also learns your writing style and uses it to make word prediction more efficient and relevant.

The settings here are specific to the word predictor that is currently active. Some word predictors may not support the settings listed here.

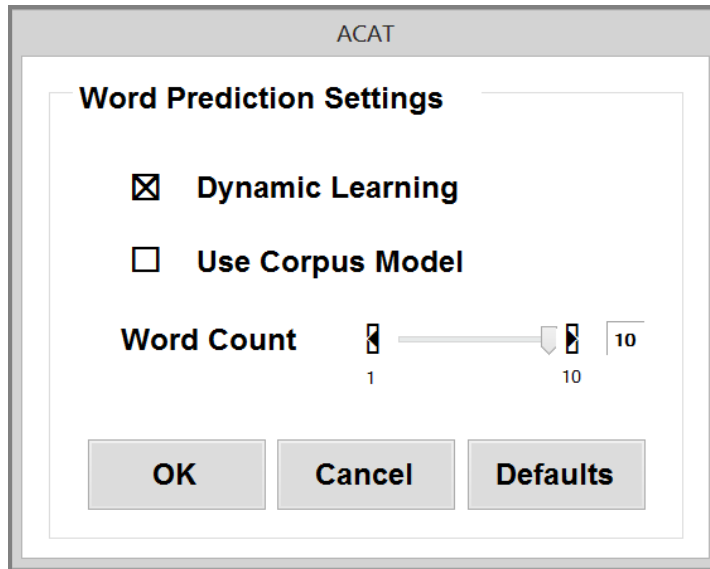


Figure 59: ACAT Word Prediction Settings Dialog

Setting	Description
Dynamic Learning	<p>Toggle this on if you want the word predictor to learn your writing style. When you type text into the talk window and press ENTER, the word predictor adds the sentence you just typed into its word prediction model. If you are working on a text or a word document, and you terminate a sentence with one of the sentence terminators - a period, an exclamation or a question mark - the word predictor adds the sentence you just terminated to its word prediction model.</p> <p>Note: Not all word predictors may support this feature.</p>
Use Corpus Model	<p>Some word predictors let you create prediction models based on your existing writings. Toggle this on if you want the word predictor to use your corpus model for prediction</p>
Word Count	<p>Controls how many words are displayed in the word prediction list in the alphabet scanner.</p>

Setting	Description
OK	Select "OK" to close the dialog. ACAT will prompt you with a Yes/No confirmation to save the settings. If you choose "Yes", the settings will be permanently saved.
Cancel	Select "Cancel" to close the dialog and discard changes.
Defaults	Select "Defaults" to restore Factory default settings.

8.4 Mouse Radar Settings Dialog

This dialog controls the settings for moving the mouse in the radar mode (see section 4.5.1).

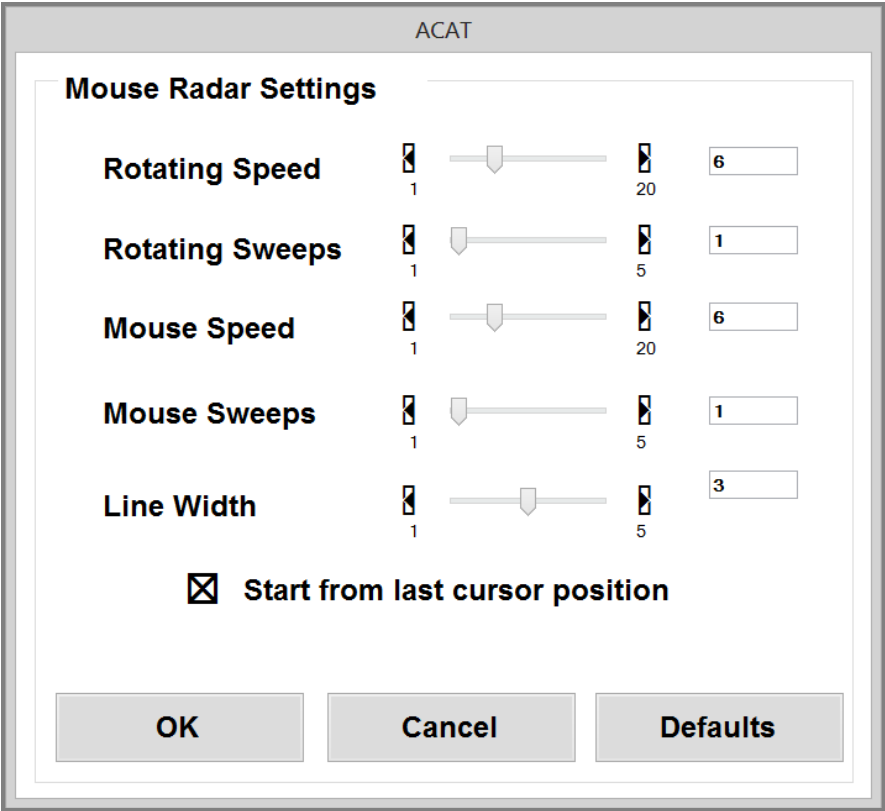


Figure 60: ACAT Mouse Radar Settings Dialog

Setting	Description
Rotating Speed	Speed of rotation of the radar line. Value should be between 1 and 20.
Rotating Sweeps	Number of times the radar line sweeps across the display.
Mouse Speed	Speed of traversal of the mouse cursor along the radar line
Mouse Sweeps	Number of times the mouse cursor traverses along the radar line
Line Width	Width of the radar line
Start from last cursor position	Toggle this on if you want the origin of the radar line set to the mouse pointer's current position. If this is turned off, the origin will be set to the center of the display
OK	Select "OK" to close the dialog. ACAT will prompt you with a Yes/No confirmation to save the settings. If you choose "Yes", the settings will be permanently saved.
Cancel	Select "Cancel" to close the dialog and discard changes.
Defaults	Select "Defaults" to restore Factory default settings.

8.5 Mouse Grid Settings Dialog

This dialog controls the settings for moving the mouse in the grid mode (see section 4.5.2).

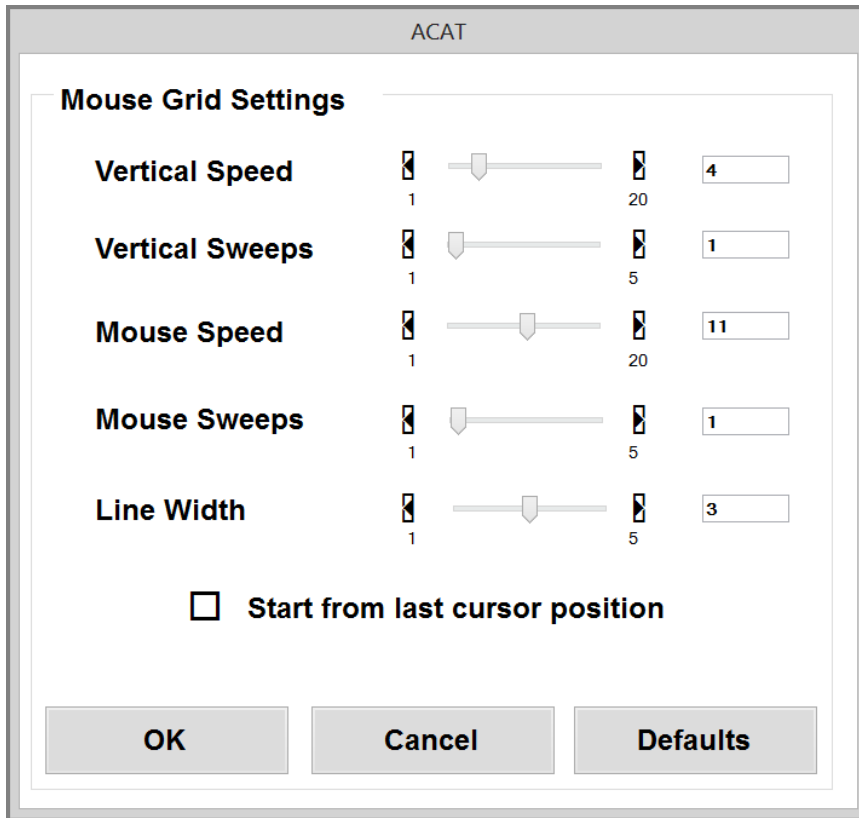


Figure 61: ACAT Mouse Grid Settings Dialog

Setting	Description
Vertical Speed	Speed of traversal of the grid line. Value should be between 1 and 20.
Vertical Sweeps	Number of times the grid line sweeps across the display.
Mouse Speed	Speed of traversal of the mouse cursor along the grid line
Mouse Sweeps	Number of times the mouse cursor traverses along the grid line

Setting	Description
Line Width	Width of the grid line
Start from last cursor position	Toggle this on if you want the grid line to start sweeping from the mouse pointer's current position. If this is turned off, grid line will start from the edge of the display.
OK	Select "OK" to close the dialog. ACAT will prompt you with a Yes/No confirmation to save the settings. If you choose "Yes", the settings will be permanently saved.
Cancel	Select "Cancel" to close the dialog and discard changes.
Defaults	Select "Defaults" to restore Factory default settings.

8.6 Voice Settings Dialog

This dialog configures the text to speech settings.

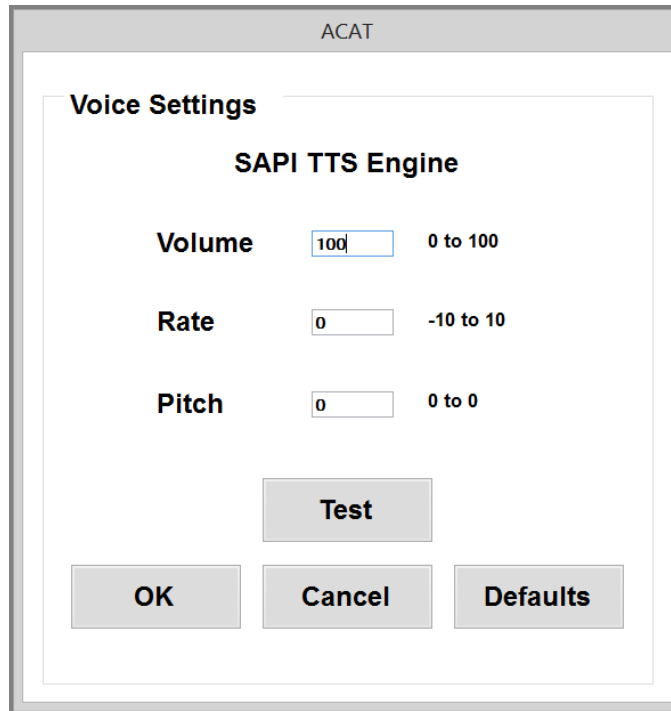


Figure 62: ACAT Voice Settings Dialog

To set the value, select the highlighted element. ACAT will display the numeric scanner which you can use to enter values.

Note: The range of values depends on the text to speech engine that is currently active.

Setting	Description
Volume	Speech volume.
Rate	Rate of speech.
Pitch	Pitch of speech

Setting	Description
Test	After setting the speech parameters, use this button to test your settings. ACAT will convert a canned phrase to speech using the parameters you just set.
OK	Select “OK” to close the dialog. ACAT will prompt you with a Yes/No confirmation to save the settings. If you choose “Yes”, the settings will be permanently saved.
Cancel	Select “Cancel” to close the dialog and discard changes.
Defaults	Select “Defaults” to restore Factory default settings.

8.7 Mute Settings Dialog

This dialog sets the pin for the mute screen (see section 6.7).

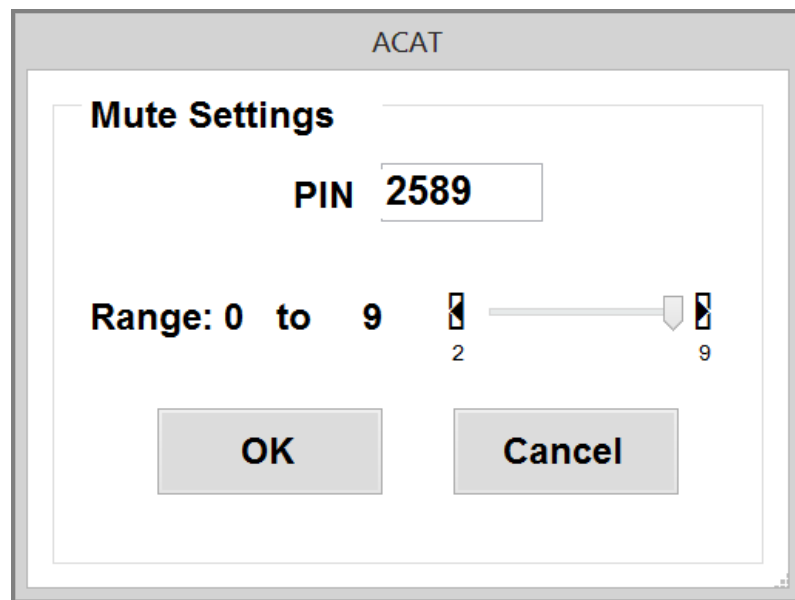


Figure 63: ACAT Mute Settings Dialog

Setting	Description
PIN	Sets the pin to unlock the mute screen. When the PIN is highlighted, activate your switch. ACAT will display a numeric scanner which you can use to enter the pin.
Range	Sets the range of digits to use for the pin.

8.8 Size/Position Scanner Dialog

This dialog lets you resize the scanner. On large monitors with higher resolutions, you may want to enlarge the size of the scanner for visibility and usability. The Alphabet scanner is displayed alongside the dialog.

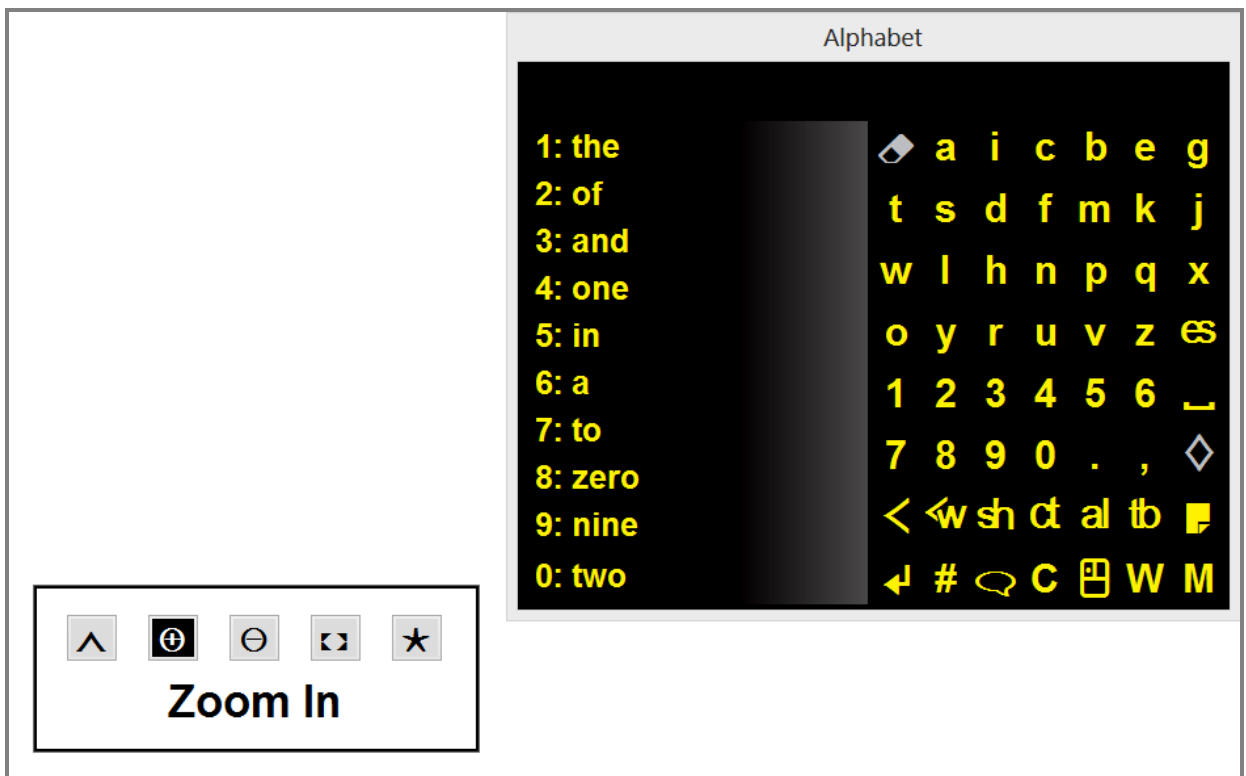







Figure 64: Resize and Position the Scanner

Setting	Description
	<p>Exits the dialog. Displays a Yes/No dialog to confirm if you want to save or discard the settings.</p>
	<p>Increases the size of the scanner. While this button is highlighted, you can continue activating your switch to continue zooming in.</p>
	<p>Makes the scanner smaller. While this button is highlighted, you can continue activating your switch to continue zooming out.</p>
	<p>Repositions the scanner on the screen. The default position is the top right corner. When you select this option, ACAT moves the scanner to each of the four corners of the display on a timer. When the scanner is positioned at the desired corner, activate your switch and the scanner will be positioned there.</p>
	<p>Restores factory default settings for the size and position.</p>

8.9 The About Box

The “About” box displays the version number of ACAT and attributions/licensing information of third party components. You can access this from the Main Menu. Activate your switch to dismiss the box.

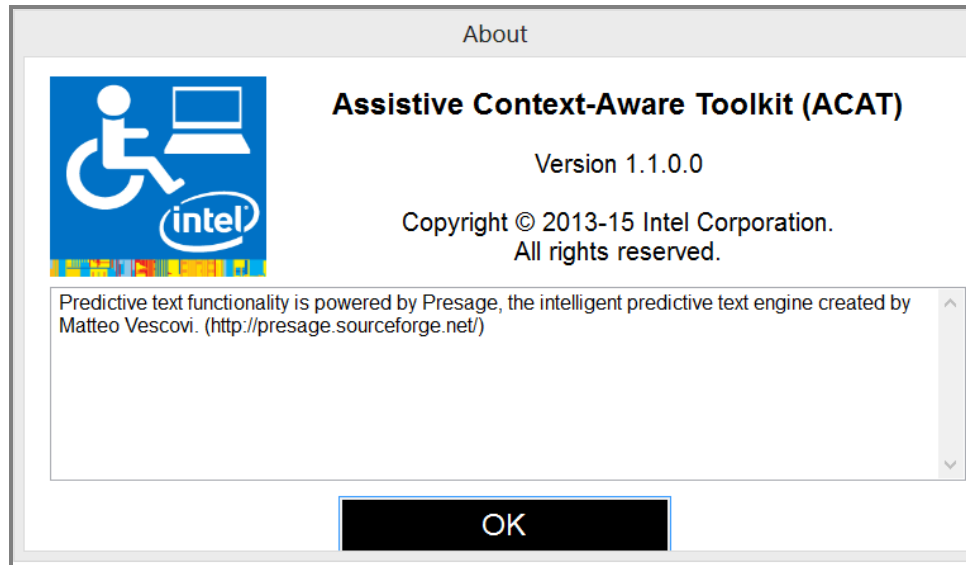


Figure 65: The ACAT About Box