User Manual

MagniLink Software - Mac

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1 About LVI

LVI Low Vision International AB was founded in 1978 and is one of the world's leading manufacturers of equipment for persons with visual impairments. Development of new products takes place in close cooperation with users and professional staff within the low vision rehabilitation industry. LVI is quality-certified in accordance with ISO 9001 and environmentally-certified in accordance with ISO 14001.

The information in this manual has been carefully checked and is believed to be accurate. However, LVI assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will LVI be liable for direct, indirect, special, exemplary, incidental, or consequential damages resulting from any defect or omission in this manual. In the interest of continued product development, LVI reserves the right to make improvements in this manual and the products it describes at any time, without notice or obligation.

2 Introduction to MagniLink S

MagniLink S is a software used to display video from a MagniLink camera. The software can control camera properties such as magnification, artificial colours and brightness. If the camera supports OCR, it is possible to OCR-process a text and have it read aloud by a speech synthesizer.

3 Minimum system requirements

- Mac OS X Version 10.6 Snow Leopard, or later
- 2 integrated USB 2.0 ports
- To use the system in minimum resolution and picture frequency you will need a computer with 2.53 Hz Intel Core 2 Duo processor, 4 GB RAM.

4 Recommended system requirements

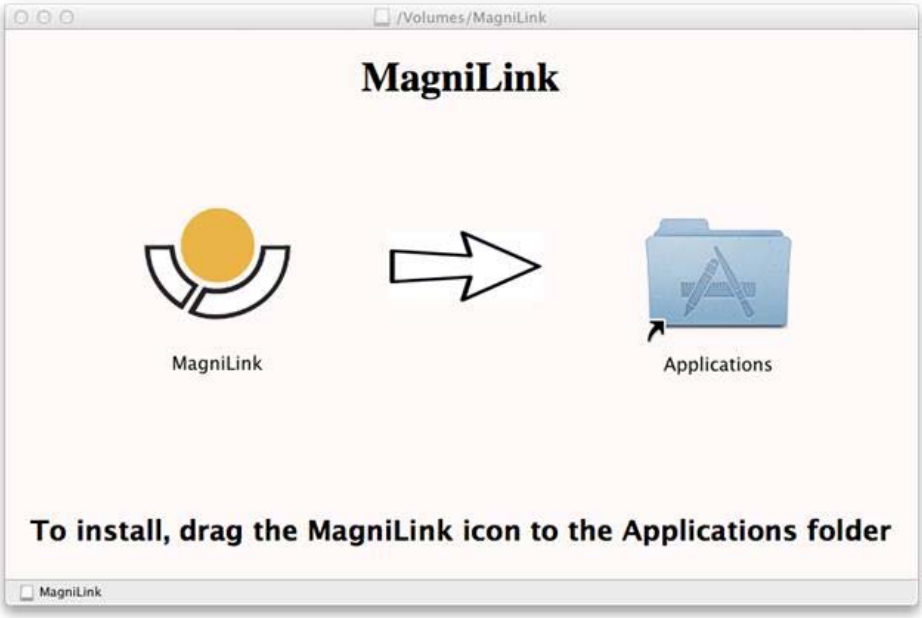
- Mac OS X Version 10.6 Snow Leopard, or later
- 1 integrated USB 3.0 port
- To use the system in maximum resolution and picture frequency you will need a computer with an i5 or i7 processor, 4 GB RAM-memory, external graphics card with at least 512 MB inbuilt memory.

5 Installation of software

To install MagniLink S on your Mac, insert the USB stick containing the software into one of the computer's USB ports. Begin the installation by double clicking on the "Software Mac.dmg" file located in the "Software Mac" folder. This will open the following window.

Continue the installation by double clicking the MagniLink.dmg file.

Read the text in the "License Agreement" dialogue box, and accept the license agreement by clicking the "Agree" button. After clicking "Agree", the following window will open.



To install MagniLink, drag the MagniLink icon to the "Applications" folder. This completes the installation.

6 Using the software

6.1 Functions via the keyboard

MagniLink Student is presented in a Mac application and all features in the system can be controlled from the keyboard.

If you want to use the standard F1, F2, etc. keys without pressing the (fn) key. You can change the keyboard settings. This setting can be accessed from the Apple menu -> System Preferences -> Hardware -> Keyboard.

Default hotkey settings from the computer keyboard.

fn + F1	Natural colours
fn + F2	Positive picture with increased contrast Artificial colours; White/Black, Yellow/Black, Green/Black, Red/Black, Yellow/Blue, White/Blue Press F2 to toggle through the different colours. (Shift + fn + F2 toggles backwards.)
fn + F3	Negative picture with increased contrast Artificial colours; Black/White, Black/Yellow, Black/Green, Black/Red, Blue/Yellow, Blue/White Press F3 to toggle through the different colours. (Shift + fn + F3 toggles backwards.)
fn + F5	Take snapshot Press fn + F5 to open the Picture saving dialog box. A file name (today's date and time) and folder (MagniLink) is automatically suggested. Just press Enter to save the picture. If you want to save the picture somewhere else or with another name or format (JPG is standard) you can manually change this.
fn + Shift + F5	Take snapshot – fast To save a snapshot picture fast without specifying file name and folder, press fn + Shift + F5. This command will save the snapshot to the MagniLink folder or to the last folder that was selected with F5.
fn + Alt + F5	Start/Stop video recording Press fn + Alt + F5 to open the Video recording dialog box. A file name (today's date and time) and folder (MagniLink) is automatically suggested. Just press Enter to save the video. If you want to save the video somewhere else or with another name or format you can manually change this. Stop the video recording by pressing fn + Alt + F5 once again.

fn + Alt + Shift + F5	**Start video recording – fast** Press fn + Alt + Shift + F5 to start video recording at once, without specifying file name and folder. This command will quick save the video to the MagniLink folder or to the last folder that was used.
fn + F6	**View stored snapshots** Press fn + F6 to view stored pictures. Mark the picture and press Enter or choose open. The picture is normally opened in the standard Mac picture-viewing program, where you can, for example, magnify the picture.
fn + Shift + F6	**View last stored snapshot – fast** Press fn + Shift + F6 to open the last saved snapshot. If no snapshots have been saved during this program cycle, the functionality will be the same as for fn + F6.
fn + Alt + F6	**View stored videos** Press fn + Alt + F6 to view recorded video sequences. Mark the video to view and press Enter or choose Open. The video is opened in the standard video viewer.
fn + Alt + Shift + F6	**View last stored video – fast** Press fn + Alt + Shift + F6 to open the last saved video recording. If no video recording have been saved during this program cycle, the functionality will be the same as for fn + Alt + F6.
fn + F8	**Preset split modes** Press fn + F8 to toggle among the preset split modes. If multiple monitors are used, the split modes will toggle over all monitors, starting with the primary monitor. The window can also be controlled using the mouse or the standard Mac OS X commands.
fn + Alt + F9	**Information and settings window** Pressing fn + Alt + F9 opens up a window in which you can adjust different settings and optimize your MLS. The window contains different headings.
fn + Alt + F11	**Return to default settings** Press fn + Alt + F11 to return to the default settings (normal window, natural colours and normal brightness).
Arrow up	**Zoom in**
Arrow down	**Zoom out**

Alt + O	Overview Switches to an overview mode. The camera zooms out and a sight is shown in the middle of the video window. To exit overview mode, press the key combination again.
Arrow left	Decrease brightness
Arrow right	Increase brightness
Alt + Arrow left	Guiding line left/up
Alt + Arrow up	Guiding line left/up
Alt + Arrow right	Guiding line right/down
Alt + Arrow down	Guiding line right/down
Alt + A	Toggle "always on top" This key combination will toggle "always on top" for the application window. If this option is activated, the camera application window will be placed above all other application windows that are not set as "always on top". This will make the camera application window viewable even if the application window does not have focus and would otherwise have been covered by another application window. This, for example, facilitates writing in Word, while viewing the camera image
Cmd + M	Minimizes the application
Alt + R	Rotates the camera picture clockwise Each time you press this key combination the picture rotates 90° (90°, 180°, 270°, 0°).
Shift + Alt + R	Rotates the camera picture counter clockwise Each time you press this key combination the picture rotates 90° counter clockwise (270°, 180°, 90°, 0°).
Alt + I	Mirror camera image By pressing Alt + I, you can mirror the camera image. This is a useful feature if you for example would like to use the camera as a magnifying makeup mirror.
Alt + F	Freeze camera image By pressing this key combination, the camera image is frozen until the key combination is pressed again.

Alt + J	**Autofocus on/off** Press this key combination to lock the autofocus in the present position. This could be used, for example, when writing by hand without risk of disturbing the focusing system with the hand or the pen. A subsequent press reactivates the autofocus system.
Cmd + ,	**Open the preferences dialog** This key combination is the standard way to open the preferences dialog in a Mac application.
Cmd + ?	**Open the manual** This key combination opens the manual pages in the standard application for viewing pdf-files.

The following functions are only available for cameras that support OCR.

fn + F4	**OCR-process** This command takes a picture for OCR-processing. The program then switches to text view and the OCR-processed text is read aloud. If the text view already contains text, this is replaced by the text from the OCR conversion.
fn + Alt + F4	**Process with OCR and add text** Works like the previous command, but the text from the OCR conversion is added to the existing text.
Alt + S	**Toggle column selector** Activates or deactivates the column selector. When the column selector is active, only those columns that are intersected by the column selector are OCR-processed.
Cmd + C	**Copy text** Copy all text in the text view to the Clipboard. It is then possible to paste the content of the clipboard into another program, such as Word.
Cmd + V	**Paste text** If the user has copied text from another program, this text can be pasted into the text view. This command replaces the existing text.
Cmd + Alt + V	**Paste and add text** Works like the previous command, but the text is added to the existing text.

V	**Switch between camera view and text view** If a text has been OCR-processed, this command switches between camera view and text view.
B	**Display mode** Switches to display mode for OCR-processed text. The available display modes are: Side view, line view, word view and a silent mode where the text moves sideways on the screen.
1	**Start/Pause reading** If no reading is currently in progress, reading starts, otherwise reading is paused.
2	**Stop reading** This command stops the reading. The next reading will begin from the start of the text.
3	**Read previous** With this command, the user can go backwards through the text. If the reading mode is sentence, you move backwards through the text one sentence at a time. If the reading mode is word, you move backwards through the text word by word. If the reading mode is set to character, one character is read for each keystroke.
4	**Read next** With this command, the user can move forward in the text. If the reading mode is sentence, you move forward through the text one sentence at a time. If the reading mode is word, you move forward through the text word by word. If the reading mode is set as character, one character is read for each keystroke.
5	**Switch reading mode** This command selects the reading mode that is to be employed when the "Read previous/next" command is entered. There are three modes: sentence, word and character.
6	**Slower** Reduces the reading speed.
7	**Faster** Increases the reading speed.
8	**Reduce volume** Reduces the volume of the voice.
9	**Increase volume** Increases the volume of the voice.

0	Next voice Switches to the next installed voice. This command also changes the OCR engine's language to the new voice's language.

6.2 Gestures

If the computer is equipped with a multi-touch pad, some functionality can be controlled from the touchpad.

Zoom

Place two fingers on the touchpad; pinch to zoom out and expand to zoom in.

Rotate camera image

Place two fingers on the touchpad and do a rotating motion to rotate the camera image.

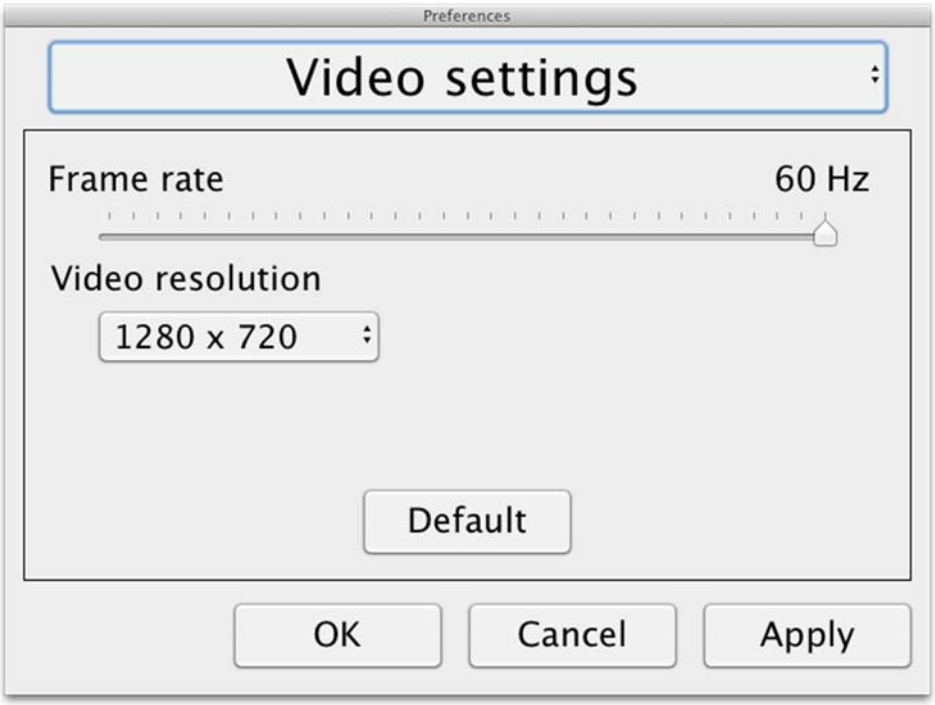
6.3 Information and settings window

The information and settings window consists of different headings that all contain either application information or application settings options.

6.3.1 About the application

This heading contains the version number of your software and information regarding copyright law. It is also possible to activate the OCR-functionality here if there is no internet connection available. Press “OCR Activation” and a dialog will appear where you can select the license file located on the USB-stick.

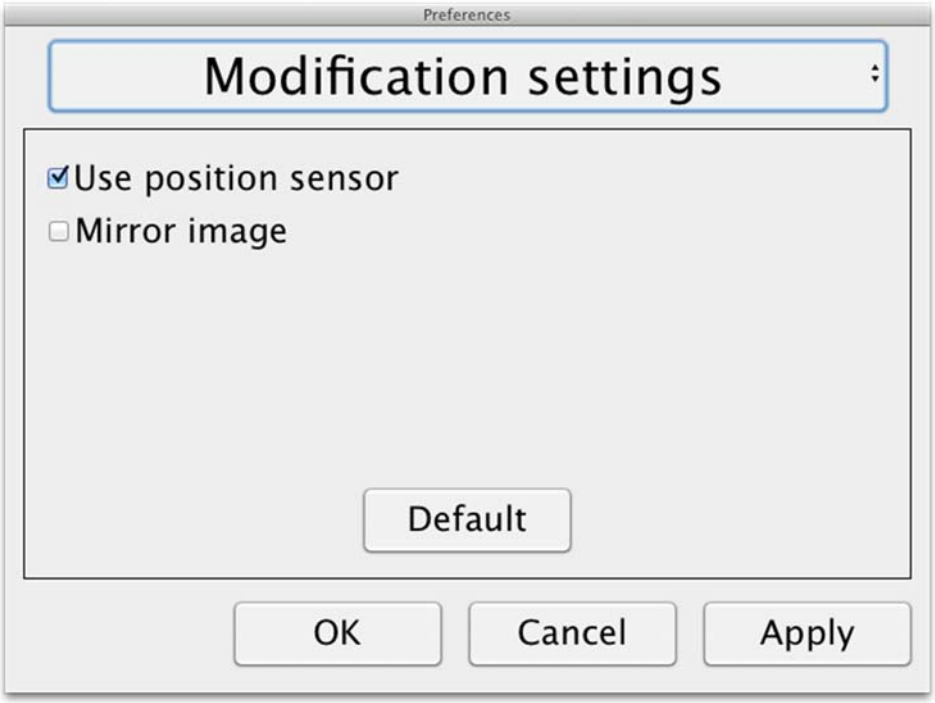
6.3.2 Video Settings



Frame rate
Allows you to limit the camera's frame rate.

Resolution
Allows you to set the camera's resolution. The number of possible resolutions depends on the camera and whether it is connected to a USB-3 or USB-2 port. Higher resolution means a clearer picture, but can result in a lower frame rate.

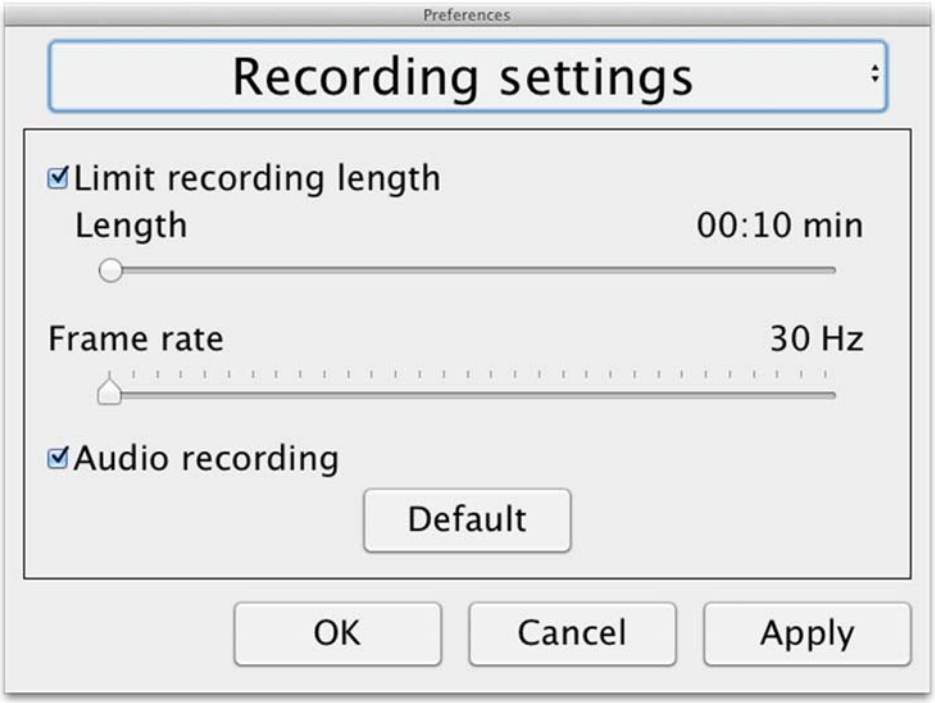
6.3.3 Modification Settings



Use positioning sensors
When this setting in activated, the application remembers the settings for distance mode and reading mode.

Mirrored image
When this setting is activated, the camera image is mirrored.

6.3.4 Recording Settings



Limit recording length

The video recording can be limited in steps of one second from 10 seconds up to 10 minutes. If “Limit recording length” is unchecked, then the video recording length is unlimited, which means that the video recording will continue until it runs out of disk space or is stopped manually. Even if the video recording length is unlimited it will not be possible to record more than 60 minutes per video file.

Frame rate

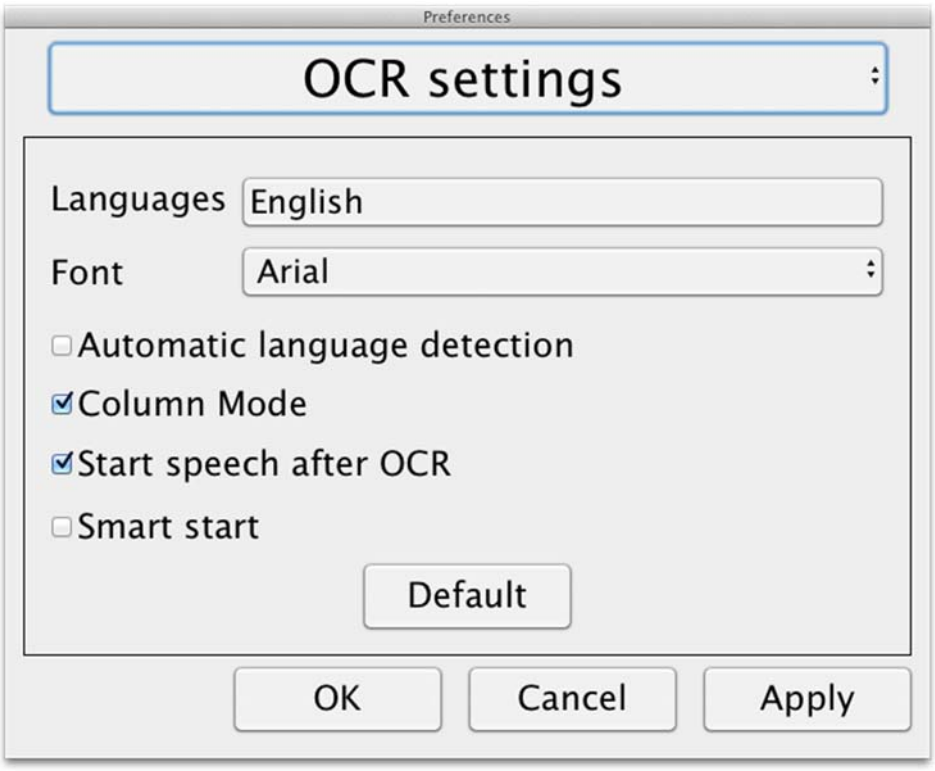
The recording frame rate can be set between 30 and 60 frames per second. A lower frame rate provides lower quality video, but will take less space on the hard disk.

Audio recording

If the computer is equipped with a microphone (internal or external) sound can be added to the video recording by activating this setting.

6.3.5 OCR settings

This heading is only available if the camera supports OCR.



Languages

Makes it possible to change the languages that the OCR engine is to interpret. It is possible to select several languages. To achieve a good result, it is important that the languages set is the same as that used in the text.

Typeface
Here the user can set the typeface used for viewing text that has been OCR-processed. The typeface in use has no effect on the OCR-processing.

Automatic language detection
When this function is active, the application will try to detect the language of the text and change the voice to the detected language. The application will only attempt to identify among selected languages and only wors for English, Swedish, Norwegian, German, Danish, Dutch, Spanish, Finnish and French. If a text on a different language is to be OCR-processed, then this function needs to be deactivated.

Column mode
When this setting is active, the OCR engine processes the text in columns, which is appropriate if it is a newspaper text that is to be processed.

Start speech after OCR
If this box is ticked, text will automatically be read aloud after an image has been OCR-processed.

Smart start
Smart start works as follows. If a text has already been read aloud and a new OCR conversion is starting, the reading will start from the position where the reading of the old text stopped.

6.3.5.1 Quality of OCR processing

In order to optimize the results of the OCR conversion, you should bear in mind the following.

- Ensure the magnification is sufficient. Very small text produces poor results in the OCR software. A minimum of 12pt is recommended for the lowest magnification on the reading camera.
- Avoid glossy paper as this results in reflections in the image. This impairs the results of the OCR conversion. If you intend to use glossy paper, we recommend that the light on the unit is switched off.
- Certain fonts can be difficult for the OCR engine to interpret.
- It is important that the text contrast is sufficient.
- It is important that the OCR engine's language is the same as that of the text.

- The camera's resolution should be set to at least 1280x720, see Video settings for more information.

6.3.6 Speech Settings

This heading is only available if the camera supports OCR.

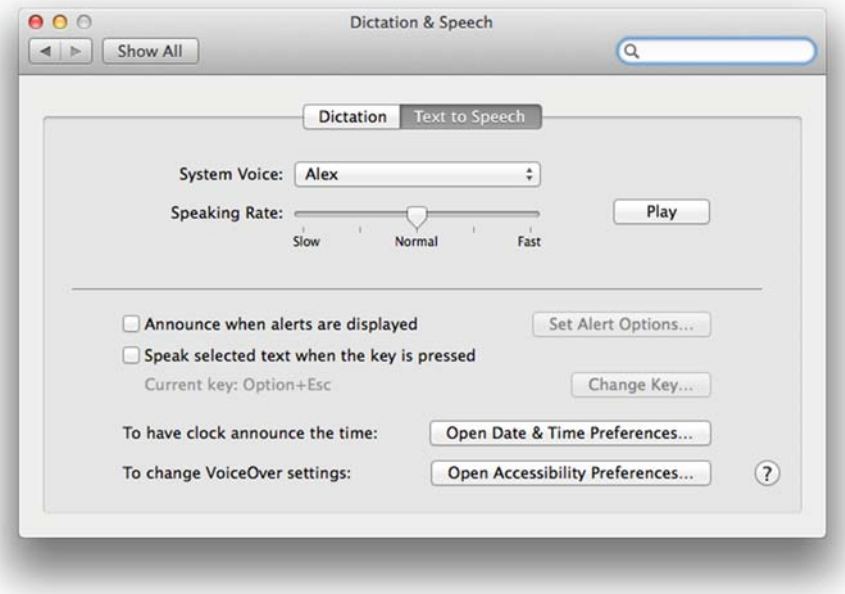
Voice
Here the user can select among all available voices.

Volume
Set the sound level for the voice.

Speed
Set the speed of the voice.

7 Download voices

In Mac OS X 10.7 or later, it is possible to download voices for different languages. Go to "System Preferences" -> "Dictation and Speech" (The exact name and look of the dialogs can vary some depending on the version of Mac OS X).



Choose the tab "Text to Speech", click on "System voice" and select "Customize".

Check to voices you wish to download and click OK.

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