Effective application development depends on an understanding of the needs of the user.

- Forms
- Focus
- Color
- Flickering

The examples cited in this document are built using the Flex SDK, and either Adobe Flash Builder 4 or command line tools. When using the command line tools, accessibility options are set by editing a Flex MXML document. In Flash Builder 4, most accessibility properties can be set through the Properties view. Other properties closely related to accessibility, such as `tabIndex`, `focusEnabled`, and `tabEnabled`, can also be set through the same Properties view.

An overview of assistive technologies

To create an accessible Flex application, developers must understand the needs of users with disabilities, how users with different disabilities interact with an application, and the assistive technologies they commonly use.

Users who are blind typically rely on a keyboard, rather than a mouse, to interact with the computer. These individuals often use screen-reading software, such as JAWS for Windows (JAWS is an acronym for Job Access With Speech) or NVDA Window-Eyes, to access information on the computer. These screen readers and others like them convert electronic text to audio speech. For software applications that are accessible, screen readers can provide summary information about what is on the screen, as well as assist users with navigation within the application. Applications that use graphical elements in addition to text can be made accessible to screen reader users by providing textual equivalents for any graphical element that is used to convey information.

People who have a visual impairment other than total blindness may use screen magnification software, such as ZoomText or MAGic, to enlarge the content on the screen or adjust the contrast between foreground and background colors. These users often adjust the appearance of the mouse pointer, caret, and focus rectangle to make them easier to see.

Users who are deaf or hard of hearing rely on visual cues, including captioning or transcripts, to access auditory feedback and the audio portions of multimedia content. Users with a hearing disability other than complete deafness may use assistive hearing devices to amplify sound, or they may rely on the ability to increase the volume of audio produced by an application.

Users who have speech impairments may not be able to produce speech or may have difficulty producing speech that can be interpreted by voice controlled/activated software applications. Although speech is not required for the vast majority of applications, voice-controlled or voice-activated applications are becoming more common. While voice control features can improve accessibility for users with mobility impairments and other disabilities, it is important to keep in mind that users with speech impairments will need an alternative way to control these applications and enter information into them.

Individuals who have mobility impairments may have difficulty manipulating a mouse or using a standard keyboard. Often, these individuals will use alternative input devices to interact with an application. They may use speech recognition software, such as Dragon Naturally Speaking Professional, to substitute voice commands for keyboard and mouse input. These individuals may also use on-screen keyboards that are activated by pointing devices, hardware switches, or eye gaze technology. Additional assistive technologies such as word prediction software and foot-controlled mice are also common.

Accessibility testing overview

Assistive technologies obtain information about a Flex application from the Adobe Flash Player instance in which the application is executing. This information is provided via the Microsoft Active Accessibility (MSAA) Application Programming Interface (API). While some accessibility information is recognized and provided automatically via MSAA, Flex developers must take explicit steps to make most accessibility information available to assistive technology. Many of the techniques described in this document are directed at exposing this information to assistive technology.

Ultimately, accessibility is a measure of how well an application can be used by people with disabilities. The most effective tests for accessibility are conducted through testing by individuals with disabilities. Developers