www.corvuskit.com

Corvus

CO

Menu

COrvus – Accessible Kit for Android

The set off applications which makes Android phones accessible for visually impaired users

COrvus - Getting started

This document is a reference guide. It doesn't contain an in-depth explanation of the various parts of the application. Slovak users are advised to consult the detailed user guide which contains the complete description of the special environment, as well as the built-in screen reader.

COrvus installation

Speech engine installation

Before installing COrvus make sure that a speech engine that supports your preferred language is installed (Settings > Language & Input > Text-to-speech output). If this is not the case, you can use any of the available applications. COrvus was successfully tested with the following applications:

- eSpeak TTS
  A free speech engine
  Supports more than 40 languages
  Works reliably only under Android 4.2 and older
  https://play.google.com/store/apps/details?id=com.googlecode.eyesfree.espeak
- eSpeak
  A paid speech engine, costs about €1.20 (exact pricing information can be found on the webpage below)
  Supports 79 languages
  Works with Android 4.0 and higher
  https://play.google.com/store/apps/details?id=com.reecedunn.espeak
- Vocalizer TTS
  The application can be evaluated as a demo version for 7 days, after which it has to be purchased, pricing starts at €3.60 per voice. Voices are bought separately. Detailed pricing info can be obtained inside the application.
  Supports 40 languages
  Works with Android 4.0 and higher
  https://play.google.com/store/apps/details?id=es.codefactory.vocalizertts

After installing the speech engine into your device you have to set is as default (preferred TTS engine) – open Settings > Language and input > Text-to-speech output and check "eSpeak TTS", "eSpeak" or "Vocalizer TTS" as the preferred engine.

When using Vocalizer TTS, you will be asked to buy the desired voice. Select the voice in the preferred language. If you don't buy the voice, the engine will fully function during the 7-day period in which you can evaluate it.

COrvus installation

The COrvus app is not currently distributed using the Google Play store, so it is necessary to install it in a bit special manner. The COrvus installation apk file can be downloaded from http://www.corvuskit.com or it might be provided by your reseller. Then proceed with the following instructions.

- If the installation file corvus.apk was not downloaded from the internet using your smartphone, copy it by standard means from your PC into the storage of your phone or into a memory card.
- Allow the installation from other sources than the Play Store (open Settings > Security and check "Allow installation of apps from sources other than the Play Store").
- Find the COrvus installation file that had been previously copied into your phone using any file manager and launch it.

From this moment on the installation works the same as installing any other application.

Phone settings

Most of the settings mentioned below can be easily activated using COrvus special environment tool Verify Android settings placed in Help section. We recommend you to follow these steps:

- In COrvus special environment go to Menu -> Help -> Verify Android settings
- Perform double tap using one finger on respective items, proceed step by step, read displayed description carefully, when you are interested to activate described function then in next step confirm by choosing "OK" and in displayed dialogue perform respective operation.

Description of some important settings follows:

- Upon the first run of the COrvus app the phone will probably ask you which application to use as a home screen (launcher). COrvus can be used as a default home screen application and we advise for the blind users to select COrvus. This makes sure that COrvus starts when pressing the Home button.
- Most phones allow you to turn on the function that enables cancelling the call by pressing the Power button. It is recommended that you activate this function. It can be usually found in the accessibility settings.
- Android 4.4 or higher enables setting the default SMS application. The default SMS application is the only app that can manage the SMS and MMS messages. Other applications can send the message but are no table to perform the operations such as message deletion. If you want to use COrvus as a full-featured SMS application, set it as the default SMS application. You can perform this in the phone settings.

COrvus also contains a basic screen reader. To activate it, perform the following steps:

- In the settings menu select and activate the Accessibility item.
- In the Services grouping find and switch on the COrvus service.
- Upon activation the phone will ask if you want the COrvus application to have Access to the Explore by touch function. Answer the question positively.
- In COrvus special environment you can choose one of special keyboards for writing in edit fields (see below). From the version 1.4.0 it is possible to use these special keyboards also in Android environment. To make it possible it is necessary to enable COrvus keyboard and then set it as default system keyboard. Respective options are to be found in Language & input settings, you can reach them easily also by tool Verify Android settings from Help which has been already mentioned.

Uninstalling COrvus

COrvus can be uninstalled using the apps manager like any other application.

Getting started

The COrvus special environment is mainly based on controls whereby there is only one control displayed on the screen at a time. The COrvus app is currently communicating using lists, edit fields, and read-only edit fields. It doesn't matter where the user touches the screen when controlling them. Of main importance are the gestures that the user performs. That's the reason for deactivating Menu and Back buttons that are placed on the bottom or right under the screen, so they aren't pressed accidentally. Only the Home button is active. The only case when the finger placement matters, is when using the keyboard. Thanks to the 3x4 layout (we don't use QWERTY keyboard) the position of each character can be found easily by a visually impaired user.

Using the COrvus screen reader in common Android applications is similar to using the known Talkback app. The gestures, however, are modified in a way that enables the COrvus user to control the screen reader with ease but the main advantage is that the screen reader doesn't have to be started or stopped when leaving or returning to the COrvus special environment.

The screen reader is designed with the fastest possible responsiveness in mind.

The gestures used in the COrvus special environment

This part contains the brief review of the basic gestures used in the various parts of COrvus special environment.

- Swiping with one finger in any of the four directions (put the finger on the screen and perform the fast movement - swipe – in the desired direction) simulates up, down, left or right arrow in most cases.
- Swiping with two fingers at the same time in any of the four directions (the same as the single swipe but two fingers are used instead) is usually used to move the cursor by a bigger segment.
- Single tap with one finger (a short touch with one finger) currently doesn't have any universal function assigned.
- Single tap with two fingers (a short touch with two fingers at the same time) is used to perform the backspace function in the edit fields when the keyboard is active. When performing the two-fingered gestures it is necessary to have the two fingers put on the screen in a way that there is at least a little space between them. Otherwise the phone might understand the gesture as one-fingered.
- Double tap with one finger (two short taps in a quick succession) usually works as a confirmation.
- Double tap with two fingers at the same time is usually used to activate the context menu. When performing the two-fingered gestures it is necessary to have the two fingers put on the screen in a way that there is at least a little space between them. Otherwise the phone might understand the gesture as one-fingered.

- Double tap and hold with one finger (similar to double tap but the second tap is longer so the finger is held on the screen longer than in the first tap) currently doesn't have any universal function assigned.

The above gestures can be also combined with the volume buttons, e.g. press volume up, while pressed perform one of the gestures, and release the button.

It is possible to bring up the brief contextual help on every screen of the COrvus special environment. Press the Volume down button, double tap with two fingers and release the button. The contextual help can be read using the gestures for navigation in the edit fields, which are listed in the chapter below.

In the basic app menu that consists of the list of items and resembles a tree (it can be nested) the navigation within one level is performed by swiping up or down. To nest deeper / confirm the item double tap with one finger. To go back / up one level swipe left. The list of items (for example when performing the mass operation on SMS or contacts) can be selected by swiping right.

In the lists where it makes sense (e.g. SMS or Contacts) and also in the edit fields the context menu can be displayed using the two-fingered double tap. Leaving the edit field is also possible through this context menu.

Using the edit field and the 3x4 keyboard

The COrvus app doesn't use a QWERTY keyboard when typing text or numbers into the edit fields because searching for letters without the sight control can be lengthy with it. Instead we rely on a proven 3x4 keyboard model that was used on classic keypad cell phones with a little modification (improvement).

In the writable edit fields the keyboard is activated automatically.

Its appearance is the same as the keypad of the classic keypad cell phone.

To type the first number or character associated with a button move the finger around the screen. When the desired field is found lift the finger and the first character gets written. If you need to write the second or any other following character hold the finger and tap with the second finger until COrvus announces the desired character. Then lift the fingers and the character gets written.

To delete the character (Backspace), put two fingers anywhere on the screen, and lift them up quickly.

If you need to switch off the keyboard, write the capital letter, or write a longer sequence of numbers do it by holding the volume up button and swiping up or down with one finger at the same time. This way you can change the keyboard or even hide it totally.

When the keyboard is hidden it is possible to use the gestures for text navigation anywhere on the screen.

- Use the one-fingered swipes left and right to move the cursor by character

- Use the one-fingered swipes up and down to move the cursor by line
- Use the two-fingered swipes left and right to move the cursor by word
- Use the two-fingered swipes up and down to move the cursor to top or bottom of the text.

When the keyboard is displayed it is possible to use the above listed gestures in the upper part of the screen (above the keyboard). The full list of gestures that can be used in the edit fields can be found in the contextual help for any edit field.

In addition to keyboard model described above which is based on additional taps when typing there are two more keyboard models available in COrvus. Detailed information about typing by drawing and typing by touch can be found in full version of User guide.

The incoming call screen

When receiving an incoming call the list of two items is displayed – the caller name and the phone number information. If the telephone number is not stored in your contacts, only the phone number is displayed.

The call can be answered by pressing and holding the Volume Up button, and rejected by pressing and holding the Volume Down button.

Press and hold the respective buttons until you hear a short beep. Shorter pressing of these buttons will only mute the ringtone without answering or rejecting the call.

The call can be also answered using the gestures but only if it's enabled in the call feedback settings. In that case use the double swipe right to answer the call and double swipe left to reject it.

The gestures used in the COrvus screen reader

This chapter contains a list of all the gestures available when using the COrvus screen reader.

- Swipe down – moves focus to the next element.
- Swipe up – moves focus to the previous element.
- Swipe left/ right – allows you to have a look at the object which is actually selected by characters, words, lines, etc. depending on chosen granularity of navigation.
- 1-swipe up/ down – allows you to set granularity of navigation (characters, words, lines, etc.). Six of the most used granularities can be associated with shortcut gestures and use them afterwards by performing these respective shortcut gestures. Go to: Menu -> Settings -> Screen reader -> Set granularity shortcuts.
- 1-swipe left – this is equal to pressing the Back button. This gesture enables to "hide" the current application and return back to the previously active application or home screen.
- Swipe left and then right without lifting up the finger – goes to Home screen (this is equal to pressing the Home button).
- Swipe down and then up without lifting up the finger – moves focus to the next button.
- Double tap – activates the focused element (the element found using vertical swipes or using the "explore by touch" function).

- Double tap and hold – depending on the element on which the gesture is applied either activates the context menu (e.g. on the Home screen of the pure Android environment) or enables to change the value of the element (e.g. slider).
- Two-fingered swipe down – scrolls the list down.
- Two-fingered swipe up – scrolls the list up.
- Two-fingered swipe left – activates the next screen in applications containing more than one screen (Home screen contains multiple screens, the App Drawer containing the list of all the applications also contains multiple screens, etc.).
- Two-fingered swipe right – activates the previous screen in applications containing more than one screen (Home screen contains multiple screens, the App Drawer containing the list of all the applications also contains multiple screens, etc.).

When performing some simpler operations controlling the COrvus screen reader is therefore similar to controlling the COrvus special environment. We recommend exploring the content of the screen by swiping down and up to make sure that you review all currently displayed elements. Equally, the selected element is activated using double tap as well as swiping left moves one level back.

The COrvus screen reader also enables to explore the screen by placing the finger on the display and moving it around its surface. This moves the focus automatically to the elements currently under the finger. This method is however pretty difficult and is recommended mainly in frequently used applications well known to the user.

Controlling COrvus with the phones containing hardware keyboard

This chapter contains description of some phones with the built-in hardware keyboard along with the brief information on controlling the COrvus application using these phones.

LG Wine Smart

Button description (turn the phone so that the display is placed further from you upon flipping):

Besides the cursor keys and the confirmation key in the middle the phone keyboard contains the following 22 keys.

In the upper row (above the cursor keys) from left to right there are Back, Home, and Overview buttons.

Below is the cursor circle divided into four parts as follows: right, left, up, and down arrow with the confirmation key in the middle of the circle.

There are 2 buttons by each side of the cursor. On the left side there is a Messaging button and the Camera button beneath it. The right side contains from top to bottom the assignable Convenience button and the Contacts button.

The row under the cursor contains from left to right: the answering call button, the C button (for clearing the characters) and the rejecting call button.

Below are the twelve regularly placed buttons of the numeric keypad from left to right and from top to bottom as follows:

1, 2, 3
4, 5, 6
7, 8, 9
*, 0, #

The meaning of buttons within the COrvus special environment and the screen reader

The buttons in the upper row (Back, Home and Overview) have the same meaning as the equally marked buttons on the common touch phones. The Back button however works only when it's turned on in settings of the COrvus special environment.

The cursor keys work the same as their equivalent swipes, as follows:

- the up and down arrow: perform the same functions as swiping up or down
- the left and right arrow: perform the same functions as swiping left or right
- the confirmation key: The short press is equivalent to the one-fingered double tap, whereas the long press performs the two-fingered double tap function

The cursor keys can also be combined with the Volume buttons to perform the same functions as their gesture counterparts combined with the Volume buttons

The Messaging button (the upper one of the two buttons by the left side of the cursor) performs the messaging function when on the main screen. It also enables quick sending of the message onto a phone number associated with a list item anywhere it makes sense. For example pressing the button on any contact in the Contacts app brings up the Messaging window with the recipient field already filled-in. The same holds for any register or the messages list.

The assignable Convenience button (the upper one of the two buttons by the right side of the cursor) launches the Android application assigned by the user.

The Camera and Contacts button (the lower buttons bi the sides of the cursor) launch the associated built-in applications of the phone operating system. They are not controlled by the COrvus app for technical reasons.

The answering call button (the first one from the left in the row under the cursor) enables besides its primary function of answering an incoming call also a quick launch of the Register app from within the main screen of COrvus. Also in any list where it makes sense it can be used to quickly call a number associated with an item under the cursor. E.G. after pressing the button in the Contacts application the number associated with a contact under the cursor will be called. If there are any

prefixes defined, the call would be performed using the line 2 (you can call using the line 1 by double tapping or by pressing the confirmation button).

The C button (the middle one in the row under the cursor) deletes a character to the left of the cursor in the edit fields (the same as the swipe left or double tap when the COrvus keyboard is shown).

The rejecting call button (the first from the right in the row under the cursor) has no additional function besides rejecting the incoming or cancelling the ongoing call.

All the other buttons are used to type the text or numbers into the edit fields. System of typing is similar to that one which was used on former phones with haptic keypad. Groups of characters are associated with respective buttons. Selection of characters is done by pressing of particular button repeatedly. Layout of characters is slightly different depending on fact whether COrvus is set as a default system keyboard.

COrvus as a default system keyboard

In case that you set COrvus as a default system keyboard (recommended) COrvus takes control over typing with buttons and typing works in similar way as typing by buttons on the screen. Thus, characters on haptic keypad buttons have the same layout as characters of virtual buttons placed in touchscreen keyboard. Type of keyboard (lowercase letters, one uppercase letter, etc.) can be changed by 1-swipe up/ down or 1-arrow up/ down. If the keyboard is off (you can turn it off by pressing 1-arrow up/ down) then haptic keypad buttons work as enhanced cursor keys with following functionality:

- 1: previous word,
- 2: one line upwards,
- 3: next word,
- 4: previous character,
- 5: to remember position (beginning of selection),
- 6: next character,
- 7: to the beginning of text,
- 8: one line downwards,
- 9: to the end of text,
- *: to copy text to clipboard,
- 0: to delete text between marker and cursor,
- #: to paste text from clipboard.

COrvus is not used as a default system keyboard

In this case numbers 2-9 contain groups of characters, number 1 button is not used.

The star button (*) activates the Symbols scheme. This mode allows typing the various symbols using the 2-9 keys. The Symbols scheme consists of multiple "tabs" that can be switched using the left and right arrow. The typing of symbols can be deactivated using the number button.

Pressing the number (#) button repeatedly toggles the typing modes (lower case letters, shift, capital letters and numbers). Long pressing the # button toggles the state of predictive text.

More information at: www.corvuskit.com