



MASARYK
UNIVERSITY



MASARYK UNIVERSITY
SUPPORT CENTRE FOR STUDENTS WITH SPECIAL NEEDS

Polygraf

⋮ Teiresiás



Polygraf was primarily developed to provide accessibility of lectures for university students with hearing and visual impairment. Consequently, it is typically used at lectures and seminars. Moreover, given the fact the requirements for technical equipment on location are minimal, it can also be used outside of school facilities (such as, presentations and business meetings) when participation of persons with disabilities is expected.

What does POLYGRAF offer

- » possibility to display real-time transcript of speech in user's handheld devices with option:
 - › to customize basic parameters of a reported text (font family, size and color, line-spacing)
 - › to scroll the text back to display earlier portions of it
 - › basic two-way communication (users can send text messages to speech-to-text reporter)
- » to display content of presentation screen in user's handheld devices with option:
 - › to attach the transcript of speech as subtitles (closed captions)
 - › view options of the presentation (zoom, color-inverting, B/W scheme)
- » independence from the local technical infrastructure

What does POLYGRAF need

- » a human speech-to-text reporter
- » hardware and software used by speaker, speech-to-text reporter and users
- » Wi-Fi network

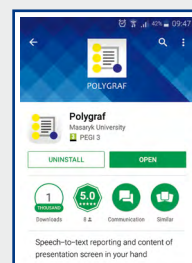
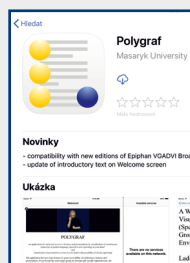
polygraf@teiesias.muni.cz

www.teiesias.muni.cz/polygraf

How to make POLYGRAF working for providers

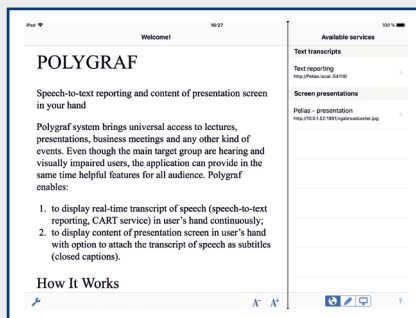
- » Download Polygraf Writer and Polygraf Broadcaster applications from Teiresias Centre website (www.teiresias.muni.cz/polygraf).
- » Install Polygraf Writer editor on a speech-to-text reporter's computer – the transcript will be typed using this application.
- » Install Polygraf Broadcaster on a speaker's computer and launch it – the application captures screen image with presentation and broadcasts it to users over the Wi-Fi network. (This piece of software can be substituted by a hardware capturing device.)
- » Connect both computers to the same Wi-Fi network. The network does not require Internet connectivity and may be set up by an ordinary access point.

Working on these systems



How to make POLYGRAF working for users

- » Open App Store or Google Play on your mobile device (smartphone, tablet), find and install Polygraf app.
- » Connect your device to the Wi-Fi network.
- » Launch Polygraf app.
- » The app lists speech-to-text reports and presentations broadcasted over the network; select the one you need.



I. Real-time transcript of speech (speech-to-text reporting, CART service)

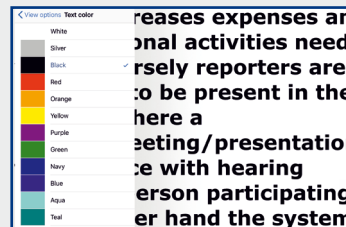


- » Service is primarily intended for users with hearing impairment dependent on the speech-to-text reporting.
- » A professional speech-to-text reporter (CART writer) transcribes real-time spoken word into text using Polygraf Writer and the text is broadcasted via the wireless network.
- » The content can be displayed for individual purposes on a handheld device and for public purposes on a large screen.



Setting options

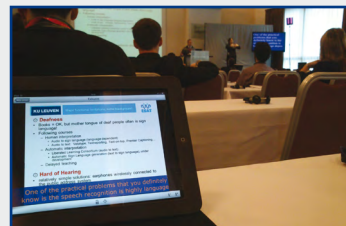
- » font family, size and color, line-spacing
- » communication interface to send text messages from handheld devices to a reporter's laptop (and vice versa), such as technical comments, further questions about the report's content etc.



II. Presentation screen mirroring



- » Users can follow the content of presentation screen on a handheld (mobil, tablet) device.
- » It improves the legibility of presentations when there is any difficulty to read it from a distance (user's visual impairment, small size of the presentation, bad light conditions etc.).



Sensory disabilities: Visual impairment III

- plays a role in
 - accessibility of physical environment
 - accessibility of virtual environment
 - accessibility of work and study technologies
 - communication and teaching methods (only if methods are strictly based on visualization)

has been increasing, the Centre has been trying to find a satisfactory solution to situations when

Setting options

- » view options of the presentation (zoom, color-inverting, B/W scheme)
- » option to attach the transcript of speech as subtitles (closed captions)

FOR STUDENTS WITH SPECIAL NEEDS
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Sensory disabilities: V

- plays a role in
 - accessibility of

Components of Polygraf

HARDWARE

- » **A laptop or PC** with the Microsoft Windows operating system. This computer is for the **text reporter**.



- » **A screen capturing device for the presenting speaker** – a broadcasting device capturing the video signal and providing it, apart from the output for data projectors, through network interface. (Optionally, this hardware can be substituted by the software – Polygraf Broadcaster.)



- » **WiFi access point** to create a wireless network connecting all devices together and transfer the content among them. There is no need of Internet connectivity for this wireless network.



- » Any **handheld device** with iOS or Android operating system (typically, a smartphone or tablet). This device works as a handheld display for **users** to follow a report and/or mirrored screen.



Components of Polygraf

SOFTWARE

» **Polygraf Writer (for the reporter's computer)**

A special text editor for Microsoft Windows; its purpose is to write and “share” the text report with the users' devices.



» **Polygraf Broadcaster (for the speaker's computer)**

The application captures the screen of speaker's computer and broadcasts it over the network to the users' devices. (This software can be substituted by the hardware broadcasting device.)



» **Polygraf Captions (for the speaker's computer)**

An optional application to display the reported text in the form of continuously updated subtitles displayed as closed captions, which can be attached to the speaker's presentation.



» **Polygraf (for the users' handheld devices)**

It handles the reception of the text report as well as the mirrored screen and it continuously updates and displays the content according to the user's custom setting.





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