



Title: Overview on Accessibility of Video Conferencing Apps and Services
April 22, 2020

Purpose and background: The purpose of this document is for United Nations staff and partners to make their video conferences as inclusive as possible for all persons with disabilities. The Stakeholder Group of Persons with Disabilities gathered the following information from representative organizations of persons with disabilities, in particular from the International Disability Alliance and its members, and from additional research. This list is by no means exhaustive, but rather attempts to provide an accessibility overview. This document is a living document and will be periodically updated as relevant.

Contact: For further information, please contact Dr. Elizabeth Lockwood at elizabeth.lockwood@cbm-global.org

I. General points

- Online platforms are not fully accessible for blind *facilitators*, although can be for blind participants.
- In general, desktop versions are less accessible than using mobile versions for blind users.
- For most online platforms, captioning needs to be ordered separately for hard of hearing participants. This creates a complex process with two separate systems. This process is awkward and creates a disadvantage for the participant.

General recommendations

- Review online instructions offered by the platform for video layout options and any specific settings for interpreters and/or speech-to-text professionals.
- Contact the platform’s technical support specialists or knowledge base.
- Work with the IT department on integrations or other solutions.
- When further research is undertaken to develop an inclusive online system, the aforementioned points and additional points below need to be taken into consideration in consultation with representative organizations of persons with disabilities.

Table: A snapshot of accessibility features of the main video conferencing platforms

Platforms	Signing deaf participants visible	Sign language interpreter visible	Captions can be added	Screen reader compatibility	Good for large meetings	Good for small meetings	Additional barriers
GoToMeeting		✓	✓	✓	✓	✓	Keyboard shortcuts only work in Windows
Zoom	✓	✓	✓	✓	✓	✓	Requires a good internet connection
Skype	✓	✓	✓	✓		✓	Video quality is inconsistent
Skype for Business	✓	✓	✓	✓		✓	Not accessible for blind facilitators
Microsoft Teams	✓	✓	✓	✓		✓	Challenging when signed and spoken languages are used with larger groups
Google Hangouts	✓	✓	✓	✓		✓	Meeting creators must have a G-Suite
WhatsApp	✓	✓		✓		✓	Requires WiFi or 4G connection

II. Video Conferencing Apps and Services – advantages and disadvantages

Below you will find an overview of the advantages and disadvantages in terms of accessibility of the main video conferencing apps and services with relevant links.

GoToMeeting - [GoToMeeting accessibility page](#)

Advantages

- Accessible for blind participants using screen readers.
- It is an accessible platform for signing deaf people if no active participation is required, as long as sign language interpretation is provided.

Disadvantages

- This platform is not accessible for blind facilitators.
- When using a screen reader, the chat box function is distracting as every comment is read out.¹
- A separate link is needed to stream live captions, which is sent via the chat box.
- Captioning needs to be ordered separately for hard of hearing participants through a third-party service.
- For signing deaf people, there is no possibility to see everyone at the same time to communicate in sign language.
- Keyboard shortcuts (an alternate way to do something that is typically used with a mouse) only work in Windows and not on iOS devices.²

Zoom - [Zoom accessibility page](#) and [Zoom accessibility FAQ](#)

Advantages

- Captions can be embedded in the video, although some people may prefer to have a link to stream text to be able to move it around.
- Accessible for signing deaf users as everyone can see each other. The World Federation of the Deaf (WFD) uses this platform for large meetings.
- This is a good option for an interactive meeting that requires output from deaf people using sign language.
- Works well for hard of hearing people if captioning is provided.
- Popular with people who use speech-to-text reporters.
- Works well for blind participants using screen readers, other than the chat box function.
- Keyboard-only navigation enabled.
- Good audio and picture quality.
- Anyone with an invite can join a Zoom call.
- Does not require a mobile or desktop app download for attendees. Users can use this platform through a web browser.
- Users can change their background.
- Supports up to 100 call participants.

- There is a chat messaging function.

Disadvantages

- Not accessible for blind facilitators.
- The chat box function is distracting for blind users as screen readers read every comment.
- It is difficult for sign language interpreters to interpret and also see the captions (used to verify spoken language at times).
- It is difficult to see the presenter and the other sign language interpreter (in a team) at the same time to monitor signs (which is part of team interpreting).
- Live captions are not available.
- Captioning needs to be ordered separately for hard of hearing participants through a third-party service.
- Closed captions must be enabled in meetings settings before the meeting starts.
- The user interface is sometimes difficult to use.
- Video conferencing requires a good internet connection, although calling in sometimes can assist with this.
- There are security issues.

Skype - [Skype accessibility page](#)

Advantages

- Accessible for blind participants using screen readers.
- Accessible for signing deaf users depending on the video quality.
- Live captions are available on the desktop and mobile versions (for video, audio and traditional phone calls).
- Closed captions are attributed to specific users.
- Users can blur their background for privacy.
- The platform can be accessed in the web browser.
- Anybody can join a call, even if they do not have a Skype account.
- Supports up to 50 call participants.
- There is a chat messaging function.

Disadvantages

- The platform does not remember preferences for captions, so they must be enabled each time.
- Users must pay to use premium features like voice mail, SMS texts, making calls to a landline, or mobile phone outside of Skype.

- Video quality is inconsistent for sign language users.

Skype for Business (will be replaced by Microsoft Teams, refer below)

Advantages

- Supports up to 250 call participants.
- Closed captions can be enabled in a Skype meeting broadcast.
- There is a chat messaging function.
- Users can blur their background for privacy.

Disadvantages

- Organizers must have a Skype for Business or Lync account through their organization, but participants can join as a guest.
- Not compatible with the consumer version of Skype.
- There can be difficulties logging in.
- Live closed captioning is not supported within the product.
- Closed Caption support for real-time transcription must be provided through a third-party service.
- User interface is difficult to use.
- Users must download the desktop or mobile app.

Microsoft Teams - [Microsoft Teams accessibility page](#)

Advantages

- Accessible for signing deaf users and sign language interpreters if a small group of four or less.
- Live captions available on desktop app and mobile, but only as a preview feature. This means that not all companies who use Teams will have this functionality yet.
- Accessible for blind people using screen readers.
- The platform has good picture and sound quality.
- There is a simple user interface.
- External guests can join as long as they have a valid business or consumer email address.
- Chat can be accessed within the web browser.
- Audio, video and screen-sharing activity can be recorded in Teams meetings. Automatic transcription allows users to playback the conversation and search within the transcript.
- Users can blur their background for privacy.
- Supports up to 250 call participants.

- There is a chat messaging function.

Disadvantages

- The browser-based web app version does not support real-time calls or meetings.
- Live captions are only available in English.
- Captions are not available in government clouds.
- It is challenging to carry out video meetings with four or more people using both signed and spoken languages, and with sign language interpreters.

Google Hangouts - [Google accessibility page](#)

Advantages

- Anyone with a Gmail account can join a Google Hangouts call.
- This platform is accessible for blind users using screen readers.³
- This platform can be used in a web browser.
- There are keyboard shortcuts for video calls and within chat function.
- This has good picture and sound quality.
- It has a chat messaging function.
- Supports up to 25 call participants.
- Supports a sign language interpreter app.

Disadvantages

- Live captioning is not supported within the product.
- Live caption support for real-time transcription must be provided through a third-party service, using an app that can be added from the left margin of the video call interface.
- Non-Gmail addresses can only be added to the video meeting if the user who invites you has a G-suite account.
- Call-in options are not always available.

Other platforms

WebEx - [WebEx accessibility page](#)

- This platform is not accessible for blind facilitators.
- This platform is very difficult to navigate for blind users, including logging in.
- The raise-hand function is not accessible for blind users.

Whereby

- This is accessible for signing deaf users and sign language interpreters since many people can be viewed at the same time on the screen. The World Association of Sign Language Interpreters (WASLI) uses this for meetings with deaf and hearing interpreters.

Blackboard - [Blackboard accessibility page](#)

- This is very accessible and easy to use for blind users using screen readers.
- Blackboard integrates with Zoom.
- This platform is very expensive.

Other Video Calling Services

WhatsApp

Advantages

- This is accessible for blind users and people who have low vision.
- This is accessible for signing deaf users via video calls. The World Federation of the Deaf uses this for daily meetings and for many regional groupings.
- This is accessible for hard of hearing people.
- This is useful for deaf people who want to communicate with sign language interpreters.
- Offers the ability to send and receive audio messages, which is accessible for blind users and users with low vision.
- Large group chats can be set up.
- Offers voice calling as well as video calling, with group calls enabled.
- Available on iOS and Android.

Disadvantages

- Presentations are not possible.
- Requires a WiFi or 4G connection.

References

Rooted in Rights: [How to Make Your Virtual Meetings and Events Accessible to the Disability Community](#)

The Big Hack: [Best video conferencing apps and software for accessibility](#)

Women's Major Group webinar series on online platforms and accessibility: (1) Methodology and accessibility [recording](#) and (2) [presentation](#) and Logistics [recording](#) and [presentation](#)

Additional resources

CBM: [Digital Accessibility Toolkit](#)

Deaf/Hard of Hearing Technology Rehabilitation Engineering Research Center: [Accessibility Tips for a Better Zoom/Virtual Meeting Experience](#)

[Global Initiative for Inclusive ICTs \(G3ict\)](#)

Inclusion Europe: [Easy-to-read information about Coronavirus available in many languages](#)

International Federation of Hard of Hearing People: [Accessibility during the Coronavirus](#) ([Word version here](#))

National Deaf Center: [What strategies are available for deafblind students using interpreters remotely?](#) and [COVID-19 information](#)

University of Washington: [Creating accessible videos](#) and [Adding captions in Zoom](#)

World Blind Union: [WBU calls for accessible and inclusive services on Corona Virus](#)

World Blind Union, the Global Initiative for Inclusive Information and Communication Technologies, and International Association of Accessibility Professionals Webinar [on How to Create and Evaluate Digital Documents](#)

World Federation of the Deaf: [Guidelines on Providing Access to Public Health Information in National Sign Languages during the Coronavirus Pandemic](#)

World Federation of the Deafblind, European Deafblind Union, the African Federation of the Deafblind, the Latin American Federation of the Deafblind: [Recommendations on inclusive policies from the global deafblind community](#)

¹ A possible solution: the facilitator can ask participants to send questions to an email or WhatsApp group instead of using the chat box.

² For details on keyboard shortcuts: <https://support.goto.com/meeting/help/use-keyboard-shortcuts-from-the-desktop-app-windows-only-g2m040026>

³ For details on using Google Hangouts with a screen reader: <https://support.google.com/hangouts/answer/6320673?hl=en>



Key recommendations for virtual meetings

May 4, 2020

Purpose: The Stakeholder Group of Persons with Disabilities has provided a quick checklist with key recommendations for UN staff to make virtual meetings accessible for all participants with disabilities. For further information, please contact Dr. Elizabeth Lockwood at elizabeth.lockwood@cbm-global.org

The first step is to choose a platform that supports accessibility for all persons with disabilities. For details, refer to [Overview on Accessibility of Video Conferencing Apps and Services](#). Below are key recommendations to consider prior, during and after a virtual meeting.

Prior to the meeting:

- Add a section for participants to indicate any accessibility requirements in advertisements and registration forms well ahead of time.
- Provide the contact information, including an email address and a phone number of a person in charge of accommodations on all event notices.
- Book a sign language interpreter (International Sign or the local sign language as relevant) or real-time captioning service well ahead of time.
- Provide at least two methods to join the meeting, such as a dial-in number along with the link to the virtual meeting.
- Design and share an accessible meeting agenda with expected outcomes ahead of the meeting.
- Share presentation materials with participants, sign language interpreters and captionists ahead of the meeting.
- Carry out audio/video/visual checks with IT staff, facilitators, presenters, captionists, and sign language interpreters prior to the webinar. Allow sufficient time to work out the technical details.

During the meeting:

- Share what accessible services are being provided and how to access the services when the meeting begins.
- Establish rules for participation at the beginning of the meeting.
- Inform everyone that only one person should speak at a time and that all individuals should mute themselves when they are not speaking.
- Participants should say their names prior to each time speaking, to include blind people and those who have low vision.
- Be aware that the raise-hand function does not consistently work for screen readers. As an alternative, for a participant who would like to speak can unmute themselves and say their name and then wait for the host to give them the floor.
- Provide the link for captioning to participants prior to the meeting, or in the chat box in the beginning of the meeting.
- Use a separate link or window for captions to avoid audio interfering with those using screen readers.
- Utilize a well-functioning headset, webcam, microphone with good lighting and strong internet connection when possible.
- Choose a notetaker for meetings to provide notes to participants afterward. Also, captioning transcripts can be requested and shared later.
- The facilitator should periodically read out the comments and questions in the chat box to include those who are using screen reader.
- Be aware that there will be a slight delay in sign language interpretation, and a much longer delay for interpretation for persons with deafblindness.
- Provide additional time for persons with disabilities to respond.

Tips for creating inclusive presentations:

- When designing a PowerPoint or other visual presentations, each slide should use plain language¹ in a Sans Serif font with no more than six lines of text per slide.
- Avoid using more than two different fonts, and do not use italics or all caps, but instead bold for emphasis.
- Add good contrast between the text and slide background so that people with low vision can read the slide.
- When using audiovisual media, provide captions or alternative formats for all audio content, including sounds. For persons with deafblindness, this may include descriptions of sounds and images.

Tips for presenters to be inclusive:

- Speak naturally and at a regular pace.
- Explain and describe graphics and pictures for blind people and those who have low vision.
- Avoid jargon, idioms, and acronyms.

After the meeting:

- Share the notes or captioning transcripts with participants.
- Post presentations and meeting recording online.
- Reach out to participants to get feedback on accessibility features.

References

NYC Mayor's Office for People with Disabilities. (2020). Accessible virtual meetings guide: <https://www1.nyc.gov/assets/mopd/downloads/pdf/virtual-meetings-accessibility-guide.pdf>

UNICEF. (2020). Inclusive remote meetings

¹ Plain language is clear, straightforward expression, using only as many words as are necessary. For example, put information in logical order with the important details first and use active voice.

Checklist to ensure accessibility

Digital accessibility

- ✓ Adding alt text descriptions to images (applied for social media: Facebook, Twitter, etc.)
- ✓ Using sufficient color contrast
- ✓ Captioning video files
- ✓ Allowing the option to turn off animation, which can affect people with seizure disorders
- ✓ Designing to support simple navigation and logical site structure

Accessible meetings

Put together by the European Disability Forum

Before the meeting

- ✓ Make sure website or online registration form for the event is accessible.
- ✓ Registration form should ask for contact information and further information about accessibility needs
- ✓ Personal assistant (e.g. for some meetings the assistant might need to register as well to get access to the venue)
- ✓ Interpretation needs, including sign language, speech-to-text (captioning), or audio description
- ✓ Accessible parking space
- ✓ Provision of documents in accessible formats (such as large print, braille, easy to-read versions, or accessible electronic format)
- ✓ Make sure there is an accessible route (without steps or with ramps/ lifts etc.) from special parking spaces to the accessible entrance.
- ✓ Try to make sure the venue has a silent room available
- ✓ Ensure there are enough places reserved for persons with disabilities at the front of the room, aisle seats, near the exit and for wheelchair users

Programme

- ✓ Organise the programme so that breaks are scheduled at appropriate times.
- ✓ Breaks should last at least 20 minutes along, and should be taken approximately every 90 minutes.
- ✓ The organiser should ensure that times are adhered to.
- ✓ Since many persons with disabilities need to plan, for example, transport to and from events, resting times, or take medication with food, sticking to the schedule is important and respectful.
- ✓ Distribute the programme in accessible formats, ideally ahead of time.
- ✓ Allow sufficient time for discussion and questions as well as for interpretation.

Documents

- ✓ Send meeting documents and practical details in advance.
- ✓ Includes: Venue of the meeting (mention the accessible entrance when this one differs from the principal entrance), Transport information (public transport schedules, adapted transport schedules/contact details), Location of reserved parking places, Prepare spare copies in braille, large print, and in accessible electronic format.
- ✓ If there is a change of programme on short notice, you can ask local blind persons' organisation or library to print them if needed.

During the Meeting

- ✓ One or two people should be available at arrival and departure to welcome and guide the participants to the conference room.
- ✓ During longer events it can be useful to have a help desk.
- ✓ Brief the security guards and staff of the venue about the needs of the participants with disabilities so that also they are ready to assist if required.
- ✓ When the person is there, address her or him directly and thereafter the person accompanying (personal assistant or sign language interpreter).
- ✓ Be as natural and polite as possible as you would be with any other person.
- ✓ Propose help, but wait until the offer for help is accepted before doing anything, and listen carefully.
- ✓ **People with reduced mobility:** Make sure beforehand that the corridors and the meeting room are free from obstructions and well lit, Be at the main entrance on time and offer help to open the doors and to get over the steps, Be informed about the location of accessible toilets and what the evacuation procedures are in the event of an emergency. Only push a person in a wheelchair if you have the person's permission, and avoid too sudden or quick manoeuvres.
- ✓ **People with visual impairments:** Always speak first. Introduce yourself and other persons clearly, explaining where they are in relation to the person. Say the person's name when you start a conversation so that he or she knows that you are talking to him or her. Before shaking hands, let the person know that you are about to do so. Always advise the person that you are leaving, so that he or she is not left talking to an empty space. If the person wants you to assist him or her in getting around, guide rather than lead. Ask the person how he or she would prefer to be guided (e.g. by the elbow, shoulder, etc.). Let him or her know when you are approaching steps or obstacles. Try to make sure in advance that the corridors and the meeting room are free from any obstacles. Be ready to give a brief description of the 'geography' (shape, size and windows) and contents (furniture and people) of a room. Warn a blind person about possible dangers in a new environment, for example, very hot radiators. To help a person to sit down, just place his/her hand on the back of the chair. Explain where the toilets can be found. Always address the person directly, not the assistant.
- ✓ **People with hearing impairments :** Find out how the person prefers to communicate – signing, lip reading or captioning. In case of captioning with a screen, make sure that the screen is big enough and that people who need it can easily see it. Sign language interpreters should be in front of the people they interpret for or well visible to them. If the person prefers lip reading, face him or her (make sure he/she is looking at you) and speak in a normal, clear and steady way. Do not shout or exaggerate your mouth movements, but use your facial expressions to emphasise your meanings. Make sure your face is in the light and do not put your hands in front of your mouth. Be ready to repeat yourself or rephrase a sentence if necessary.

Some words are more difficult to interpret and so it may be useful to try different words. Keep distractions such as background noise to a minimum (avoid background music in the hall and in the conference room during breaks)

- ✓ **People with intellectual disabilities:** Avoid lengthy written instructions or plans and diagrams on paper. If possible, accompany the person to where he/she has to go. Write down your name and telephone number for the person. For completing forms, check if the person needs assistance. more than reading and writing, there might be an issue of understanding. Provide forms in multiple languages, since many people with intellectual disabilities do not speak foreign languages. Try to break down complex information into chunks and keep language simple and logical. Keep distractions such as background noise to a minimum. Give the person time to react and reply. Speak to the person in a normal, natural way. Don't take offence at unusual attitudes or reactions of the person. Explain where the toilets can be found.
- ✓ **Persons with speech impairments:** Be patient, give them the time to speak, and let them finish their sentences before replying. If you do not understand, do not pretend to, but tell them that you haven't and ask them to repeat.
- ✓ **Persons with psychosocial disabilities:** Psychosocial disabilities, or mental health issues, as it more commonly known, are invisible and can affect anyone. These people may sometimes experience difficulties coping with daily life and the tasks and interactions it brings. Meetings can be a source of stress and can trigger panic, distress, or claustrophobia. Some persons may feel more comfortable being accompanied by a friend, family member or assistant for emotional support. If the person is distressed, respond to him/her in a calm and polite way – try to see the person and not just the problem. If a person mentions that he/she has a psychosocial disability, take it seriously and treat the person with respect. It may be difficult for them to open up about it. If the person mentions that he/she has a psychosocial disability or is experiencing mental ill-health, take it seriously and treat the person with respect. It might be difficult for them to open up about it, if they would like to do so. At the same time, some people might prefer not to share their experiences and should not be forced to do so. Offer assistance if the person seems confused, overwhelmed or distressed.
Calmly answer any questions the person might have; the information may be important to reassure him/her.

Note: Each person is different and cannot be categorised. The explanations above are for guidance only, please check with the participant directly what he/she needs or prefers.

Speakers

- ✓ Inform speakers about the accessibility needs of the participants.
- ✓ It is important that speaking times and schedules are adhered to.
- ✓ Have speakers talk directly into the microphone.
- ✓ Have speakers read what it says on the slides and describe pictures.
- ✓ Check if the speaking arrangement is accessible. Speakers may need a ramp to get onto the stage, or the removal of a chair for a panel discussion.

Presentations

- ✓ All presentations should be in accessible formats and given to participants and sign language interpreters in advance.
- ✓ The content of the presentations should be clear, concrete, and easy to understand.
- ✓ Ensure basic accessibility of PowerPoint Presentations:
 - o Never use a picture as background for the text.
 - o Make sure text and background have sufficient contrast.
 - o Try to put one sentence on one line.
 - o Use a maximum of two fonts.
 - o Use a large font.
 - o Avoid block capitals and italics.
 - o Do not use animations.
- ✓ If videos are being used ensure that they are subtitled and give an audio description if no words are spoken in the video.

Advice on how to ensure accessibility for everyone, including persons with intellectual disabilities:

- ✓ Use simple, straightforward language.
- ✓ Avoid abstract concepts.
- ✓ Use short, everyday words.
- ✓ Avoid jargon.
- ✓ Address the reader in direct, personal and respectful ways.
- ✓ Use practical examples.
- ✓ Use short sentences that cover only one main idea each.
- ✓ Avoid negations.
- ✓ Use active verbs.
- ✓ Keep punctuation simple.
- ✓ Repeat words rather than finding complex synonyms.
- ✓ Do not assume your audience has previous knowledge about a topic.
- ✓ Try not to use metaphors or figures of speech.
- ✓ Avoid words from another language.
- ✓ Dialogues are more useful than traditional presentations.
- ✓ Leave time for questions.
- ✓ Allow for the use of Accessibility Cards:
 - o Audiences may show color-coded cards to the speaker to indicate that they understand what is being said. The cards should be in different shapes for blind participants.
 - o Green cards = participants agree with what the speaker is saying.
 - o Yellow cards = speaker should slow down.
 - o Red card = participants do not understand what the speaker is saying, and speaker should explain it again with simpler words.
- ✓ Let audience members introduce themselves briefly before asking a question.
- ✓ If a microphone is passed around, check whether the needs help holding the microphone.
- ✓ When a deaf sign language user takes the floor, remember to give the microphone to the interpreter and not the person who signs.

Additional Requirements

Breaks:

- ✓ For coffee breaks and lunches, make sure that low tables for wheelchair users (not only standing tables) are provided, together with some seats/chairs to rest for

people that cannot stand for a long time.

Live captioning :

- ✓ an additional screen is required apart from the regular screen that displays the presentations. Make sure you check the space is big enough for two (or more) screens so that all participants can see both the presentations.

Accessible Online Participation

Put together by the [Swedish Disability Rights Federation](#)

Before

- ✓ Always ask for accessibility and find partners, suppliers for cooperation to improve quality of services.
- ✓ Communicate information to participants well in advance, also about how to participate.
- ✓ Allow users to express requirements for remote participation at registration for the meeting.
- ✓ Include accessibility in the budget.
- ✓ Check and test that the communication tools are accessible.
- ✓ Make sure that staff and users can operate the tools before the meeting. Assign a special online moderator and technical support at the meeting.
- ✓ Provide training sessions to users, moderators and staff
- ✓ Provide instructions to presenters before the meeting.

During

- ✓ Make time in the beginning of the meeting to make sure everybody is familiar with the meeting procedure.
- ✓ Describe the context, room and participants.
- ✓ Encourage online users to use chat to communicate any problems during the meeting.
- ✓ Stick to the structure of the agenda, make sure all participants say their names every time they speak.
- ✓ Summarize discussions and every decision before moving on to the next agenda item.

After

- ✓ Communicate the real time text transcript from the meeting to all participants.
- ✓ Evaluate the accessibility by asking users.
- ✓ Share experiences on web and social media to increase knowledge and cooperation on how to improve the Right2Participation via Accessible Online meetings.

Definitions and concepts

The following definitions are based on CRPD Article 2, except for definition on 'Accessibility' which is based on CRPD Article 9.

Accessibility means taking appropriate measures to ensure access to persons with disabilities, on an equal basis with others, to the physical environment, to transportation, to information and communications, including information and communications technologies and systems, and to other facilities and services open or provided to the public, both in urban and in rural areas.

These measures, which shall include the identification and elimination of obstacles and barriers to accessibility, shall apply to, inter alia:

- a) Buildings, roads, transportation and other indoor and outdoor facilities, including schools, housing, medical facilities and workplaces;
- b) Information, communications and other services, including electronic services and emergency services.

Communication includes (sign) languages, display of text, Braille, tactile communication, large print, accessible multimedia as well as written, audio, plain-language, human-reader and augmentative and alternative modes, means and formats of communication, including accessible information and communication technology.

Reasonable accommodation means necessary and appropriate modification and adjustments not imposing a disproportionate or undue burden, where needed in a particular case, to ensure to persons with disabilities the enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms.

Universal design means the design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. 'Universal design' shall not exclude assistive devices for particular groups of persons with disabilities where this is needed.

Digital Accessibility: information and tools

1. Introduction to Web Accessibility : <https://www.w3.org/WAI/fundamentals/accessibility-intro/>
2. CBM digital accessibility toolkit. The toolkit is currently available in [English](#) and [Spanish](#)
3. Siteimprove resources: <https://siteimprove.com/en/accessibility/what-is-accessibility/>
4. Software: Colour Contrast Analyser (CCA) to determine the legibility of text and the contrast of visual elements : <https://developer.paciellogroup.com/resources/contrastanalyser/>
5. Screen readers, what are they?: <https://www.afb.org/blindness-and-low-vision/using-technology/assistive-technology-products/screen-readers>
6. The European Disability Forum (EDF): [10 Web Accessibility Rules](#)

Accessible Meetings

1. The European Disability Forum (EDF) has published a [guide on how to make events and meetings accessible for all](#).

This guide summarises practical advice as well as general guidelines on how a meeting or event should be structured in order to make it enjoyable and accessible for everyone. It covers accessibility of the built environment (access to the venue, size of the meeting room, specifications for accessible toilets, lifts, etc.) as well as accessibility of presentations, speeches, and discussions.

2. **Sign language interpretation:**

Booking interpretation should be done when the meeting date is booked as there is a shortage of sign language interpreters, and sometimes it is difficult to ensure this service. You should book 2 interpreters for any meeting over 1 hour.

- You can read more about sign language and sign language interpreters on the website of the European Union of the Deaf: <https://www.eud.eu/about-us/eudposition-paper/sign-language-interpreter-guidelines/>
- Both of these networks can be a source of IS interpreters - World Federation of the Deaf (WFD)/ World Association of Sign Language Interpreters (WASLI) : <https://wfdeaf.org/our-work/wfd-wasli-international-signinterpreter-accreditation/wfd-wasli-accredited-is-interpreter/>
- For National Sign language contact the National Association of the Deaf (<https://www.eud.eu/eud-members/>) or the National Association of Sign Language Interpreters (<http://efsl.org/membership/full-membership/>)

3. **Captioning CART service providers o Captioning** is provided either on-site, or remotely. Both need to be planned well. On site captioning providers sometimes provide remote captioning also. Booking should be done when the meeting date is confirmed as there is a shortage of captioners. The compatibility of your meeting requirements, technical resources, etc. need to be checked with the service provider in advance.

- Global Real Time Captioning: www.grtcaptioning.com | office@grtcaptioning.com - Velotype: www.velotype.com | info@velotype.com
- Note for remote captioning. It is extremely important to ensure that the remote captioning will work well at your event. It is obligatory to do an on-site test of the remote captioning service. Also keep in mind the time difference if you use remote captioning based in different time zones.
- Here is a [technical guideline from ITU](#) for remote participation in meetings.

Accessible online participation

a) Guidelines

- [The Dynamic Coalition on Accessibility and Disability](#)
- [Remote participants HUB resources \(dipl\)](#)
- [How to make presentations accessible to all \(W3C\)](#)

b) Live streaming

- [Livestream guideline \(YouTube\)](#)
- [Add subtitles and closed captions \(YouTube\)](#)
- [Accessible media playlist \(examples and demos\)](#)

c) Reports and research

- [Meaningful participation for people with disabilities](#) by Special rapporteur Catalina Devandas, March 2016

- [Towards a framework to understand mental and cognitive accessibility in a digital context \(PDF\)](#), Licentiate thesis Stefan Johansson, March 2016
- [Bibliography of interpreting and translations](#) by University of Alicante Spain, 2001-2016
- [Social media report](#) by Media Access Australia, March 2016



Toolkit Accessible Meetings and events

European Disability Forum

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Introduction

When meetings and events are held remotely or in person, **accessibility** is important to ensure that all attendees, including people with disabilities, are able to participate and engage with the content and audience.

- **Be accessible from the beginning!**
- **Planning is key**

With a **little pre-planning**, event organisers can structure an inclusive and functional environment for all participants.



Online meetings and events

“For most people, technology makes things **easier**.

For people with disabilities, however, technology makes things
possible.”

Mary Pat Radabaugh

Director of IBM's National Support Center for People with Disabilities 1998

Online events. Make your check list!

- ✓ Online event platforms: Comparison
- ✓ Accessibility features
 - Real-time captioning
 - Sign interpretation
 - Other accessibility features
 - Budget!
- ✓ Before the event
 - Date and time, format of the event
 - Invitations and registration form
 - Agenda and structure of the event
- ✓ During the event
 - Present in an accessible manner
 - How to take questions
- ✓ After the event
 - Survey



Online event platforms: Comparison table

- We are going to focus on how to make online events as inclusive as possible for all persons with disabilities.
- There is a lot of online platforms available in the market, but not all of them are fully accessible or allow us to create accessible meetings and events.
- First thing to consider: your budget!

Platforms	Signing deaf participants visible	Sign language interpreter visible	Captions can be added	Screen reader compatibility	Good for large meeting	Good for small meeting	Additional barriers
GoToMeeting		✓	✓	✓	✓	✓	Keyboard shortcuts only work in Windows
Zoom	✓	✓	✓	✓	✓	✓	Requires a good internet connection
Skype	✓	✓	✓	✓		✓	Video quality inconsistent
Skype for business	✓	✓	✓	✓		✓	Not accessible for blind facilitators
Microsoft Teams	✓	✓	✓	✓		✓	Challenging when signed and spoken languages are used with larger groups
Google Hangouts	✓	✓	✓	✓		✓	Meeting creators must have a G-Suite
WhatsApp	✓	✓		✓		✓	Requires Wi-Fi or 4G connection
Be.live	✓	✓				✓	Keyboard shortcuts only work in Windows

Source: CBM

Accessibility Features

There are some basic accessibility features that your event needs to provide:

Real-time captioning

- Allows participants to follow the event simultaneously and in text
- Useful for many participants and interpreters
- Integrated in the platform and through an external link
- Shown in the platform as subtitles and/or full transcript
- Possibility to provide it in different languages (only one in the platform and the rest through the external link)
- One captioner per language



Sign interpretation

- Allows participants to follow the event with sign interpretation
- Useful for deaf and hard of hearing participants
- Usually two interpreters switching every 10 minutes
- Possibility to pin, spotlight and resize the images



Other accessibility features

- Screen reader compatibility
 - Labelled buttons all over the platform
 - Allows participants to access all the platform utilities
- Shortcuts for the basic functions, such as camera, microphone, raise hand, chat, share screen, etc.

- Accessible in both desktop and phone/tablet versions
- Easy to use
 - Steps to register
 - Steps to download or launch the platform
 - Main functions during the event and pop-up windows

Before the event

Date and time, format of the event

- Availability of speakers and interpreters
- Max. length of the event 2h30 hours recommended
- Format: meeting or webinar
 - Meeting: ideal for hosting more interactive sessions where you'll want to have lots of audience participation or break your session into smaller groups.
 - Webinar: ideal for large audiences or events that are open to the public. Typically, webinar attendees do not interact with one another.
 - Consider your budget! Larger capacity means extra cost.

Features	Meeting	Webinar
Audience	Small-medium audience	Large audience
Roles	Host, Co-Host, participant	Host, Co-Host, Panelist, Attendee
Audio	Everyone can control audio	Attendees in only -listen mode
Video	Everyone can control video	Only host and panelists can control video
Participants list	Everyone can see participants	Only host and panelists can see attendees
Chat and Q&A	Only chat box	Chat and Questions Box
Email reminders	No email reminders	Email reminders when registration form enabled
Polls	Polling available	Polling available
Surveys	Post- event survey available	Post- event survey available
Registration	Registration form for meeting	Registration form for webinar
Close Captioning	Available	Available
Recording	Available	Available
Breakout Room	Available	Not Available
Password	Available	Available

Invitations and registration form

- The invitation may have multiple graphical elements, ensure that images and logos have alt text and documents/programs are accessible
- Send the link to register via email /post on social media
- If you are including a registration form, ensure that the form and the platform are accessible, especially to users who might not be using a mouse, or use a screen reader,
- Include a statement letting individuals know that they can request accommodations
- Include privacy statement for personal data and recording permission.

Registration

Registration Questions Custom Questions

Create Your Own Question

You are prohibited from soliciting confidential personal information (such as credit card information or social security numbers) in your registration questions.

Order	Your Questions	Required
1	Accessibility requirements:	<input checked="" type="checkbox"/>
2	This meeting will be recorded only for EDF internal use. Please confirm that you consent:	<input checked="" type="checkbox"/>

New Question

Accessibility requirements:*

Choose One...

This meeting will be recorded only for EDF internal use. Please confirm that you consent:*

Choose One...

Questions & Comments

* Required information

Information you provide when registering will be shared with the account owner and host and can be used and shared by them in accordance with their Terms and Privacy Policy.

Register

Agenda and structure of the event

- Agenda

- Contact speakers and moderator in advance
- Deadline for presentations and speaking notes. Create in advance all documents in an accessible format
- Propose a test at least one week before the event with interpreters and speakers
- Plan a break of 15 min. at least
- Make room for at least 20 min. Q&A during the event
- Plan a practice session of at least 45 min. before the event with panelists and interpreters to check on connection, screen sharing and last-minute questions



- Structure of the event

- **General slides** to be prepared in advance
 - . Accessible format
 - . House-keeping rules slides at the beginning
 - . Speakers profile slide with picture
 - . Share in advance with interpreters and participants so they can prepare the vocabulary.
- Create post-event **survey** in advance
- **Polls**: decide if you will use polls during the event and make sure they are accessible
- **Videos**
 - . Format compatible with the platform
 - . Captioning integrated or send to the captioner in advance
 - . Send to the sign interpreters in advance
- Establish a **single point of contact** for technical and content questions in advance.
- Establish clear roles:
 - . Host, Co-host, moderator, speaker



- . Control over the presentations
- . Management of content questions
- . Management of technical questions and issues

During the event

Present in an accessible manner

- Encourage all attendees to identify themselves by name before speaking. Give a physical description is very useful.
- Speak slowly and not too fast. Captioners need to be able to follow-up correctly
- Turn on your video and face the camera. Seeing the speaker helps participants maintain attention, and it can be helpful for anyone who is reading lips.
- Be descriptive and describe visual content (including videos)
- Keep in mind that expressions such as, "right here" or "here we see" or "in the upper-right" will not translate well to participants who cannot see the screen.

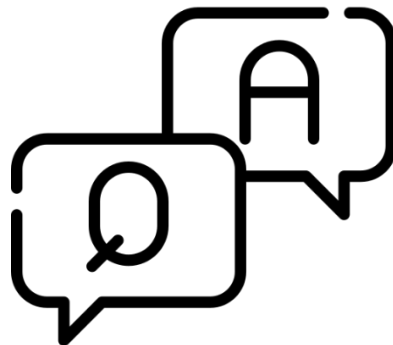


How to take questions

Participants have a few options for asking questions during an online event. These options vary depending on the event format (meeting or webinar).

- Q&A dedicated box (not always available)
- Chat box
- Raise their virtual hands and unmute themselves

Did you know... Repeating the questions helps anyone who can't access the chat visually during the session, and it can even improve quality of captioning.



After the event

Follow up after the meeting and sharing materials (notes, transcript, recording, links, resources) always in an **accessible format**.

- Post a [Video Recording](#) of the event with accurate captions
 - Recording should include the sign interpretation and the subtitles
 - Share the materials used during the event as an attachment
 - Consider a video and subtitles editor to correct and time the transcript
- [Post-event Survey](#)
 - Available as an integrated function in the platform or you can use an external program
 - Do not exceed 15 questions if possible
 - Collect feedback from participants on the content and accessibility of your event.



Zoom

How does Zoom score?

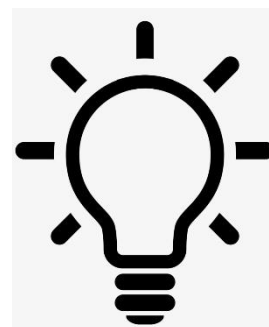
+ Zoom is the most widely used platform for online meetings and events and one of the most accessible ones.

- Possibility to multi-pin and resize cameras for sign interpretation
- Real-time captioning integrated as subtitles and full transcript modes
- Screen reader compatible
- Meeting and Webinar formats
- Language interpretation up to 9 different languages
- Breakout rooms
- Buttons large and with icons
- Does not require download, launches on Browser

— **Requires a good internet connection and mobile version less accessible than desktop. US based.**

How to create an event on Zoom. Small tips

- Meeting or webinar? It depends on the budget, level of interaction and the capacity needed for the event.
- Be careful with the time zone you indicate
- Customize your registration form including the accessibility requirements and permission to record questions (make them required)
- Create your polls, breakout rooms and post-event survey in advance
- Establish your alternative hosts and language interpreters in advance
- Make sure you invite all your panelists and interpreters:



- In meeting send them all the registration link by email
 - In webinar add them manually in the dedicated section
- For the practice session before the event:
 - In meeting enable the “waiting room”
 - In webinar enable the “practice session”
- Choose destination of your recording: in the cloud or in your computer
- If you know from which countries your participants are going to be using the phone to attend your event, customize the “Dial” countries in “Audio”.

Platform Accessibility Links

- Zoom: [Zoom – Accessibility](#)
[Zoom – Getting Started with Closed Captioning](#)
- Microsoft Teams: [Microsoft Teams Accessibility](#)
- GoToMeetings: [Accessibility Features](#)
- Google Hangouts: [Using Hangouts with a Screen Reader;](#)
[Keyboard Shortcuts for Hangouts](#)
- Google Meet: [Google Meet Accessibility](#)

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