**Remote Participation for People who are visually impaired**

# Introduction

Remote participation is an increasingly popular method of sharing and exchanging information without the requirement of physically attending an event. Examples include business meetings, collaborative seminars, conferences, educational lectures or discussions and even medical examinations or interventions. As potential participants acquire increasingly sophisticated technologies for personal or business use, it is obvious that the savings that accrue by the elimination of travel and subsistence costs will result in more and more remote participation events.

The tools for remotely participating event are, in my experience, inaccessible in general to people who are blind like me. This puts us at a severe disadvantage in participating and competing with our sighted colleagues in the areas of education, employment, social interaction, etc. This document will list some of the problems that I have encountered over several years, including very recently. It concentrates only on MS Windows based technology as I primarily use MS Windows rather than other technologies such as IOS or Android.

# Screen Reading Software

Blind people use screen reading software to access information on a computer screen. This converts text to speech and they can listen to it through a set of headphones. Graphics and images can not be read directly, but if they are tagged by text then this text can be read. An example is associating an alt text with a graphic on a web site.

To optimise access for screen reading software standard methods of writing information to screen are required. This is best achieved by using APIs that open the information to the screen reading software in a standard fashion. These APIs include Microsoft Active Accessibility (MSAA), Iaccessible2 and Windows Automation API.

# Prior to Remote Participation

The Web site used to share information on and to register for the event is often not accessible.

The internationally accepted guidelines for web site development are the W3C’s Web Content Accessibility Guidelines (WCAG). These have now become international standard ISO/IEC 40500:2012. Details can be found at:

[www.w3.org/wai](http://www.w3.org/wai)

# Remote Participation Tools

Often most of the commercial remote participation tools write information to a computer screen in a non-standard fashion. Blind people frequently find that this means that a new window obscures other information and when they try and dismiss this window it does not expire. While may not be the case for people who can view the screen, but it many people using screen reading software find this to be the case.

In many cases the tools needed to initiate a call to are not accessible. This may be because an inaccessible button has to be located and clicked or the entire screen where a call is initiated is inaccessible. The result is difficulty in participating. As remote participation is often used to avoid the costs associated with attending meetings far from the participant’s normal location, this could involve a considerable cost.

Please see some suggestions below to improve the accessibility of remote participation tools.

# During the Remote Participation Event

Blind People normally find that nobody is given responsibility to ensure that remote participants have opportunities to participate including in “Questions and Answers” sessions or to ask a question. Remote participants are, thus, often unintentionally ignored. A remote convener should be identified to carry out this task as the chairperson is often too busy to do both jobs.

It is very difficult for a blind person to manipulate the hand raising facility used by the websites and also used by the call organizers. Thus it is difficult to alert the chairperson or remote convener that they want to intervene.

When a blind person participates by phone, they find that they are often muted by the chairperson or remote convener. As such, they have no way of indicating a desire to contribute. This can be overcome if the remote convener now and then requests input from remote participants or unmutes the phone from the meeting side and allows the remote participant to mute or unmute their own phone. This, of course, requires discipline and proper decorum on both sides of the interaction.

Blind or low vision people find that when participating by phone and if a video is played as part of a presentation or if there is language translation they cannot hear either of these.

# Sharing Sound Outputs

A problem that is unique to people using screen reading software is that when they are listening to an event as a remote participant they can't use the computer to listen to anything else. PowerPoint presentations or videos are often shown or emails and private messages may be exchanged amongst participants during the event. However, if the blind person is listening to the event they cannot listen to those other things at the same time. What they must do is stop listening to the event while they read an email, chat or look at a website they are directed to.

Most computers only have one audio channels and this is being used by the screen reader. So that a person can read the chat or other webpages they have to use another device, be it a phone or tablet with voice over to provide the second audio connection. Calling in or being called can provide this extra connection and allow the user to use his/her computer to read chats or webpages.

# Design Approaches and Training

To overcome some of the problems described above, two main approaches are required. One is aimed at the designers and developers of remote participation tools and the other at those organising and running events that include remote participants.

Universal Design is an approach to designing products and services to make them accessible to as many people as possible without alteration and to give those who cannot access them directly equivalent access using the likes of screen reading software. It recognises the importance of liaising with stakeholders, including those with disabilities, as early as possible in the design stage so as to avoid difficult and possibly expensive retrofits later. It is recognised in the UN Convention on the Rights of Persons with Disabilities.

A Universal Design approach to new remote participation tools or major revisions to existing tools should be adopted to optimise their accessibility.

International standard ISO/IEC 40500:2012 should be used when developing web sites to be used in association with remote participation events. This standard also indicates how to develop tools such as apps for mobile devices.

Once it is anticipated that there will be remote participants to an event, a person should be identified to ensure their effective participation. This should happen as early as possible in the planning stage for the event to ensure that the likes of the registration process and information sharing web site are accessible.

The chairperson and the remote convener for a meeting where remote participants are taking part should have received training in advance. This should sensitise them to the needs of remote participants. It should also sensitise them to the best methods to ensure that remote participants have an equivalent opportunity to interact with the event as those who are physically present.

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