Speech-to-text technologies to broaden access by people with hearing loss

Introduction: This "cheat sheet" provides a brief description of automated speech-to text technologies capable of broadening access by people with hearing loss. Such technologies supplement and potentially replace traditional methods, including but not limited to telecoils, human captioners, and interpreters. Note that the technologies described here are not necessarily compliant with legislation on accommodations such as the Americans with Disabilities Act (ADA).

1. Presentation Translator (PT) is an addon for Microsoft Powerpoint made by Microsoft:
    a. A computer running Windows 10 with an audio jack connected to a lapel microphone, USB microphone, or headset (to improve SNR)
    b. PT installed on the computer alongside Microsoft Powerpoint
    c. Performance can be enhanced if the following are added to the notes box for each slide:
        i. technical vocabulary
        ii. relevant sections of Wikipedia or research articles
    d. Prior to actual talk, initiate and save the file
    e. A slide will be generated with a five-letter code that people can use to join in using Microsoft Translator (see below) on their mobile phones/tablets/laptops
        i. Allows for translation into other languages, as well as saving of transcript
2. Microsoft Translator (MT) is either an phone or web app and can be used in conjunction with PT:
    a. Any smartphone with the MT app installed or a computer with the MT web app
    b. A five-letter code that people can use to join in using MT on their mobile devices
3. Google Slides is a feature available only to those on computers using Google Chrome:
    a. A computer with an audio jack connected to a lapel microphone, USB microphone, or headset (to improve SNR) and Google Chrome installed
    b. Presentation must be made in Google Slides or imported into Google Slides
    c. present the talk with the Google Chrome browser
4. Google Live Transcribe is an Android app that transcribes all speech that the device picks up:
    a. A smartphone (Android only) with Google Live Transcribe installed
5. Live Caption is an iPhone/iPad-only app that transcribes all speech that the device picks up:
    a. iphone or ipad only with Live Caption installed
    b. For continuous captioning, a nominal monthly fee is charged.
6. Other technologies:
    a. Otter.ai - free transcription service for up to 600 minutes of audio per month

Scenarios - optimal performance via clear speech and accessories to ensure high SNR
(Numbers refer to the technologies mentioned above, uppercase letters refer to other scenarios, and lowercase letters refer to accessories below)
A. Podium talks at conferences: audio integrated with either (1) and (2) or (3) or (4).
B. Group, lab or committee: daisy chain of USB microphones with either (1) and (2) or (3) or (4).
C. Faculty meetings: preferably microphone array integrated with either (A) or (B).
D. Grant review panels: preferably microphone array integrated with either (A) or (B).
E. Group dinners: lapel microphone with (2) or (4) or (5).
F. One-on-one conversations: lapel microphone with (2) or (4) or (5).

G. Seminars: Like (A) but for questions from the floor, use daisy-chain microphones with (2) or (4) or (5).
H. Lectures: Same as (G).
I. Podcasts: Use accessories (e, g and/or h below) to feed audio into device using (2) or (4) or (5).
J. Conference calls: Same as (I).
K. Impromptu or informal talks in large settings: lapel microphone with (2) or (4) or (5).

Useful accessories (examples only) with technical diagrams at Deaf Ear Scientists:
a. Lapel microphone: Link
b. Headset microphone: Link, MT recommended headsets
c. USB type-C adapter for audio jack for Android phones: Link
d. Apple Lightning adapter for audio jack for iphones: Link
e. iRig or iRig2 adapter for smartphones or tablets: iRig; iRig2
f. Daisy chain of USB microphones: Link
g. TRS male to 2-female Y-splitter: Link
h. TRRS male to male audio cable: Link
i. FM system such as Roger^{TM} technology: Link
j. High sensitivity flexible microphone for smartphones: Link (credit Christian Vogler)
k. 3.5mm TRS to 3.5mm TRRS adaptor cable: Link (credit Dana Mulvany)
l. TRS to TRRS patch cable: Link (credit Chris Kriedel)

Recommend testing beforehand and preferably with a back-up solution.

Update History

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