



TECHNOLOGY AND DISABILITY POLICY HIGHLIGHTS – JANUARY 2021

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OVERVIEW

The Wireless RERC conducted our annual content review of the Technology and Disability Policy Highlights newsletter. The top five most cited words were accessibility, assistive, COVID, broadband, and public. This past year's hot topics mostly centered around expanding access to broadband amid the COVID-19 pandemic. This year we also celebrated the 30th anniversary of the Americans with Disabilities Act (ADA). Not long after, 2020 saw movement to codify inclusive access to virtual environments with an ADA amendment, the *Online Accessibility Act* [**H.R. 8478**], introduced to Congress on October 1st. The Act aims to provide a "predictable regulatory environment" for online commerce to ensure equitable access for all customers. Though COVID-19 resulted in many companies and researchers redirecting their attention to creating contact-tracing and social distancing monitoring methods, and accessible smart masks to combat the pandemic, innovation persisted in *non*-COVID related accessible wireless technologies; a testament to the tenacity of the mobile access and inclusion movement.

To that end, the Wireless RERC is currently seeking research participants with sensory disabilities from the Metro Atlanta area to participate in a study investigating the accessibility of various emergency alerting signals (audible, visual, tactile, and a combination of these) under everyday conditions and in their environments. If you are interested in participating, please email salimah@cacp.gatech.edu.

Finally, the Wireless RERC will convene its State of Technology Forum **Tuesday, March 23rd, from 8:50 am to 1:00 pm through Wednesday, March 24th, from 9:15 am to 12:00 pm**. The Forum will examine the evolving nature and capacities of wireless technologies and identify opportunities to meet a range of community needs for access, equity, and inclusion. To maintain a roundtable-feel, the event is invite-only, and there is limited space. If you would like to be added to the outreach list, please email Salimah@cacp.gatech.edu.

This issue also includes news about broadband mapping, accessible COVID-19 resources, smart devices, wearables, augmented reality, virtual reality, artificial intelligence, WCAG 3.0, and more.

REGULATORY ACTIVITIES

BROADBAND MAPPING FOR IMPROVED DATA COLLECTION

January 19, 2021 – The FCC approved additional rules for the Digital Opportunity Data Collection program to gather more granular broadband mapping data to more effectively evaluate whether broadband deployments are reasonable. These rules build upon two previous Report and Orders (R&O) implemented by the FCC in early 2020. This Third Report and Order In the Matter of Establishing the Digital Opportunity Data Collection and Modernizing the FCC Form 477 Data Program [**WC Docket No.s 19-195; 11-10**] specifies that facilities-based fixed service providers report broadband service coverage to the Digital Opportunity Data Collection database, including coverage available for both residential locations and business locations. As it pertains to mobile services, they also require additional information reporting regarding provider networks, including base station coordinates and propagation. “Today we require fixed wireless providers that submit propagation maps and propagation model details to submit the geographic coordinates (latitude and longitude) of each base station used to provide terrestrial fixed wireless service because such information will allow us to assess the validity of their propagation maps. When a provider claims to provide coverage in an area, knowing whether its base stations are located within or near that area will allow us to assess whether the coverage is reasonable.” The Order develops standards for collecting broadband deployment data from state, local, and tribal mapping entities, federal agencies, and third parties. The Order also establishes a systematic process for providers to share connectivity challenges for fixed and mobile coverage map data. [Source: FCC]

ADDITIONAL INFORMATION:

[Third Report and Order \[WC Docket No.s 19-195; 11-10\]](#)

<https://www.fcc.gov/document/fcc-takes-next-step-collect-more-precise-broadband-mapping-data>

WIRELESS RERC NEWS

METRO ATLANTA AREA RESEARCH VOLUNTEERS NEEDED

In research funded by the National Institute on Disability, Independent Living, and Rehabilitation Research, faculty at the Georgia Institute of Technology **are seeking participants for a usability study of prototype wireless emergency alert notification signals**. Because people with different types of disabilities aren't always considered in the design of alerting systems, this research seeks feedback from individuals who are blind, have low vision, who are deaf, or hard of hearing. **You will be asked to carry a device that produces alerts for a period of up to two**

weeks. During this time, you will acknowledge any alerts you receive by pressing a button on the device. You will receive up to 14 alerts per week, and each alert will only be about 10 seconds long. Research findings are expected to inform the development of technology and policy solutions to improve WEA messages' timely receipt by people with sensory disabilities.

To be included, you *must*:

- Be 18 years of age or older
- Be deaf, hard of hearing, blind, or have low vision
- Be able to speak and understand English and/or American Sign Language

Each participant will receive a \$40 cash stipend.

If you are interested in participating, please contact Salimah LaForce at salimah@cacp.gatech.edu or 404-839-8741. She will provide more details about the study and schedule your participation.

THE TDPH'S TOP 25 OF 2020

The Wireless RERC conducted our annual content review of the TDPH. The top five keywords were accessibility, assistive, COVID, broadband, and public. In 2019, the most prevalent subjects were access, policy, conference, research, and devices. This shift is reflective of this past year's content centering around expanding public access to broadband amid the



COVID-19 pandemic. As the world went virtual and national elections took place, it became imperative that accessibility be at the forefront of conversations about virtual education, civic engagement, and digital access. School districts that elected to continue distance learning struggled to ensure equity. In March, the CARES Act gave states more than \$30 billion to provide Emergency Education Relief grants to help schools purchase assistive and adaptive educational technologies for students with disabilities. Also, early in the pandemic, the U.S. Department of Education (DOE) issued a supplementary fact sheet offering guidance, technical assistance, and information on flexibility within the confines of the law "to ensure that all students have access to meaningful educational opportunities." The factsheet addressed misconceptions about federal law, with some educators believing that federal disability law presented insurmountable barriers to remote education. The OCR and OSERS, in partnership with the U.S. DOE, sought to debunk this notion.

However, the 2020 TDPH collection also indicates that accessibility in many spaces was reactive instead of proactive. The American Foundation for the Blind (AFB) released a comprehensive report on the impact of COVID-19 on people with visual disabilities, and many participants (88%)

expressed information access concerns. Regarding civic engagement, from August to late October, states passed provisions to expand electronic ballot options for people with disabilities; but, many of these provisions were lacking in promoting true access and inclusion. In Bexar County, people with hearing disabilities, including the Deaf community that rely on American Sign Language (ASL) to communicate, noted that voting independently was limited to two locations with ASL interpreter assistance, even though the county had 48 early voting locations and 302 planned voting locations for Election Day. Local disability advocates such as the nonprofit No Barriers Communications argued that iPads with virtual remote interpreting (VRI) services should be available at every voting location. Also, Michigan was sued because the absentee voter system only consists of paper ballots, inaccessible to people with vision and print disabilities. In Hawaii, Act 136 was passed, and it allowed voters with disabilities to request an electronic ballot. But there wasn't a uniform process for doing so. As a result, many voters with disabilities could access the ballots.

In 2020, articles related to accessible and assistive technology focused on wireless device and service advancements. Many stories shared positive change, such as a rise in text-to-911 usage, innovation in wireless devices assistive to people with print disabilities, accessible gaming, and assistive technology in educational settings and conferences. A major topic in the 2020 TDPH collection highlighted the potential impact of 5G. The 70/80/90 GHz is unused in a significant portion of the United States. An FCC proceeding asserted that non-federal and federal entities are underutilizing this spectrum for fixed point-to-point communications links. Many developers who seek to use this spectrum consider it a promising resource, as it could open new offerings such as wireless 5G backhaul and more wireless services on aircraft and ships. In the wireless access and inclusion field, 5G expansion is an opportunity to advance wireless assistive devices' capabilities.

2020's advance towards transparency, accountability, and action was spurred in large part by the Broadband DATA Act, requiring the FCC to enforce semiannual collection and distribution of granular data related to the "availability and quality of service of fixed and mobile broadband internet access service." The FCC's expansion of the lifeline program and increased funding for telehealth platforms began in April of 2020 as COVID cases steadily rose. In July, as the national lockdown persisted into its 4th month, the FCC had awarded 14 rounds of funding from the Connect America Fund to continue expanding broadband access. The FCC also continued efforts from 2019 to broaden 6GHz frequency access. Several stakeholders provided feedback on allowing 1,200 megahertz of spectrum in the 6 GHz band to be available via WiFi 6. By May 2020, the FCC issued a ruling permitting this next generation of WiFi to be deployed for low-powered devices. According to FCC Chairman Ajit Pai, the agency is encouraging the use of the 6 GHz band for low-power devices like "accessibility technology for Americans with disabilities, virtual reality gaming, augmented reality glasses, in-vehicle systems, and other emerging technologies."

This year, we also celebrated the 30th anniversary of the Americans with Disabilities Act (ADA). Though large gatherings were discouraged, advocates and members of the disability community virtually celebrated. On social media, the National Council on Disability commemorated the momentous occasion with a social media campaign, [#30onADA30](#). The hashtag signifies a six-month campaign where participants were encouraged to share 30 words or less (or 30 seconds of audio/video), communicating their support and love for the ADA. National and local leaders recognized the progress that the ADA has made possible. FCC Chairman, Ajit Pai, released a statement where he affirmed the FCC's commitment to equity and access to emerging technology for people with disabilities.

2020 saw movement to codify inclusive access to virtual environments, on par with the ADA's stipulations around the built environment. The *Online Accessibility Act* [**H.R. 8478**] was introduced to Congress on October 1st to amend the ADA to include a website accessibility compliance standard and limit private parties' lawsuits until other remedy options are exhausted. The Act aims to provide a "predictable regulatory environment" for online retailers and commerce to ensure equitable access for all customers. In Sacramento, California, state legislators passed *Assembly Bill 3267*, which requires the Office of Emergency Services (OES) to update the State Emergency Plan every five years. Per FEMA and the California Emergency Management Agency, the access and functional needs population refer to those who "may have additional needs before, during, and after an incident in functional areas, including but not limited to maintaining independence, communication, transportation, supervision, and medical care. Individuals in need of additional response assistance may include those who have disabilities, live in institutionalized settings, are elderly, are children, are from diverse cultures, have limited English proficiency, or are non-English speaking, or are transportation disadvantaged." The Assembly Bill aims to ensure an inclusive emergency planning process. Several other legislations were introduced or passed related to broadband access and accessibility in virtual spaces, such as Missouri House Bill 1768, CARES Act, and the Enabling Extra Time to Extend Network Deployment (EXTEND) Act (H.R.808).

Despite the COVID-19 pandemic, researchers and developers continued to create improved accessible wireless devices and wearables. To highlight a few innovations, ReSound ONE, a new hearing aid technology, developed a technology based on individualized hearing assessments; and Grameenphone company launched a sign language-based video call service named 'sign-line,' which seeks to facilitate a higher degree of access to digital services for those with hearing and speech disabilities. In South Africa, Technovera, a startup, developed Pelebox Smart Lockers. These smart lockers are a part of the healthcare infrastructure that delivers daily medicine to patients in minutes. Microsoft Azure Cognitive Services launched Custom Commands. The Custom Commands (CC) draws from various aspects of the Speech and Language Center in Azure's Cognitive and Speech Services to make task completion or command-and-control scenarios a seamless operation

in a developer's app. Project Steady Wheels, spearheaded by Dr. Jacob Sosnoff, explored the validity of smartphone-based postural control assessments in adults with mobility disabilities who use wheelchairs. Though COVID-19 resulted in many companies and researchers redirecting their attention to creating contact-tracing, social distancing monitoring methods, and accessible wearables to combat the pandemic (i.e., smart masks), innovation persisted in *non*-COVID related accessible wireless technologies; a testament to the tenacity of the mobile access and inclusion movement.



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Tuesday, March 23rd

- Discussion-based sessions, each focusing on research, development, and stakeholder engagement.
- Dynamic research and development demos of advancements in the wireless field followed by Q&A.

Wednesday, March 24th

- Select paper presentations highlighting the recent work of the Wireless RERC.
- Themed Discussion: *"The best way to predict the future is to invent it."*

To maintain a roundtable-feel, the event is by invite-only, and there is limited space. If you would like to be added to the outreach list, please email Salimah@cacp.gatech.edu.

SURVEY OF USER NEEDS (SUN)

The SUN is the Wireless RERC's cornerstone survey on wireless technology use by people with disabilities. In addition to questions about cell phone and tablet use, this version of the SUN collects

information about wearables, "smart" home technologies, and other next-generation wirelessly connected devices. Your responses will:

- Help designers and engineers make more accessible wireless devices, features, and services for people with disabilities, and
- Inform recommendations to better ensure inclusive policies and practices.

If you have a disability, please consider taking this survey. If you know someone who has a disability, please send the survey to them.

Scan the QR code to open the survey on your mobile device, or to take the survey via phone, call 404-839-8741, or **Take the survey online at <http://bit.ly/wRERC-SUN2020>**.



OTHER ITEMS OF INTEREST

CDC FOUNDATION AND GEORGIA TECH'S CENTER FOR INCLUSIVE DESIGN AND INNOVATION LAUNCH MICROSITE WITH COVID-19 RESOURCES FOR PEOPLE WITH DISABILITIES

Georgia Tech's Center for Inclusive Design and Innovation (CIDI) partnered with the Centers for Disease Control and Prevention (CDC) to launch [a microsite with information related to COVID-19 for people with disabilities](#). The "microsite" highlights resources by accessibility type. There are also additional resources to support people with disabilities during COVID-19 and teleworking, such as webinars and training. This project was also made possible by Deaf Link, the Center for Literacy and Disability Studies (CLDS), Department of Allied Health Sciences, University of North Carolina at Chapel Hill, and the American Association on Health and Disability (AAHD). [Source: CDC Foundation via PR News Wire]

ADDITIONAL INFORMATION:

[CDC Foundation and Georgia Tech's Center for Inclusive Design and Innovation Launch Microsite with COVID-19 Resources for People with Disabilities](#)

<https://www.prnewswire.com/news-releases/cdc-foundation-and-georgia-techs-center-for-inclusive-design-and-innovation-launch-microsite-with-covid-19-resources-for-people-with-disabilities-301217482.html>

FIRST PREGNANCY TEST PROTOTYPE FOR VISUALLY IMPAIRED WOMEN

January 29, 2021 – Today, all pregnancy test devices rely on visible results. This sacrifices the privacy of blind or partially sighted women, who need to get others involved to discern their tests' results. Furthermore, using a pregnancy test is challenging because the packaging is hard to read

and open. Thus, making pregnancy tests accessible was a much-needed step towards equality and inclusion for women with visual impairment. The Royal National Institute of Blind People (RNIB) created the first prototype of a tactile pregnancy test for women who are blind. The prototype uses the same technology used in current stick devices, but the result is displayed on a tactile pad instead of a digital display. The user can find their test results by simply touching and feeling the tactile elastic pad. The device also uses high contrast colors for ease of use and another tactile switch at the bottom, which rises to indicate that the test has been successfully triggered.

RNIB has publicly shared their [research](#) on creating an accessible prototype and the [3D Cad files](#) for the prototype. They hope that designers will take this approach and incorporate them into their products, moving closer to a design for all ethos that considers the whole person's attributes, such as being a woman with a disability. [Source: Venkat, for Assistive Technology Blog]

ADDITIONAL INFORMATION:

[RNIB Creates World's First Pregnancy Test Prototype for Women with Vision Impairment](#)

<https://assistivetechblog.com/2021/01/pregnancy-test-prototype-for-blind-women.html>

GOOGLE AI IMPROVES VOICE CONTROL ACCESSIBILITY

January 28, 2021 – [Voice Access](#) on Android enables users to control their device using only verbal commands. To function properly, it needs on-screen user interface (UI) elements to have reliable accessibility labels. Unfortunately, many apps don't have adequate labels for UI elements like images and icons. To address this challenge, Google launched IconNet, a system that can automatically detect icons using only the pixel values displayed on the screen, regardless of whether icons have accessibility labels.

IconNet is optimized to run on-device for mobile environments. A major challenge for an on-device solution is that it must be compatible with a wide variety of phones with a range of performance capabilities. Additionally, because Voice Access needs to respond to a user's commands (e.g., "tap camera," or "show labels"), the inference time needs to be short (<150 ms on a Pixel 3A). IconNet uses a lightweight model with low inference latency for an optimal user experience. IconNet analyzes the screen's pixels and identifies the icons' centers by generating heatmaps, which provide information about the position and type of the different icons present on the screen. The current IconNet model achieves a mean average precision (mAP) of 94.2% on a Pixel 3A and can detect 31 different icon types (to be extended to more than 70 types) based on UI screenshots. Going forward, the engineers hope to incorporate other UI elements, such as images and buttons, into IconNet. [Source: Gilles Baechler and Srinivas Sunkara, for Google Research]

ADDITIONAL INFORMATION:

[Improving Mobile App Accessibility with Icon Detection](https://ai.googleblog.com/2021/01/improving-mobile-app-accessibility-with.html)

<https://ai.googleblog.com/2021/01/improving-mobile-app-accessibility-with.html>

TOOLS TO HELP STUDENTS WITH DISABILITIES WITH REMOTE LEARNING

January 26, 2021 – Brian Norton, Director of Technology Services for [Easterseals Crossroads](#), spoke to Wish TV about assistive technology for remote learners. Easterseals Crossroads is an 80-year strong assistive technology agency that promotes independence for persons with disabilities, has an equipment loan library with more than 2,500 items, and allows customers to try devices for free before purchase. Norton says that regardless of the platform (Windows, Chrome, or iOS), there are many tools available to help. For example, Microsoft provides the Math Solver App on iOS. It recognizes math problems with detailed step-by-step explanations, interactive graphs, and much more. Microsoft provides [Microsoft Learning Tools](#), which includes an immersive reader, dictation, and read aloud. These allow for less visual crowding, remove barriers that keyboard and mouse access might cause for persons with mobility and dexterity difficulties, and students can hear their writing read aloud.

Other helpful apps aid students with note-taking, visual reading, and reading comprehension. [MicNote](#) is a NoteTaking app that allows you to sync written notes to audio recordings and is also available as a Chrome extension. [Helperbird](#) is an app for those with visual disabilities. It reads text aloud, changes fonts, increases the font size and word and line spacing. Tools like [SMMRY](#) and [Rewordify](#) help with language. [SMMRY](#) summarizes text to improve comprehension, and [Rewordify](#) improves reading and learning by simplifying language. Finally, Norton outlines two web resources that make learning fun for all students. [SnapCam](#) brings lenses and filters to live streams and video chats on PC and Mac. And [Confetti!](#) is a Chrome Extension that gives you confetti all over your screen with one click of a button.

Norton believes it's important for students of all abilities to navigate, understand, and interact with content and others while learning remotely. To learn more about Norton's work, head to Easterseals' [website](#). [Source: Amber Hankins, for Indy Style, Wish TV, Indiana]

ADDITIONAL INFORMATION:

[Tools and Devices to help students with Remote Learning](https://www.wishtv.com/indy-style/tools-and-devices-to-help-students-remote-learn/)

<https://www.wishtv.com/indy-style/tools-and-devices-to-help-students-remote-learn/>

AUGMENTED AND VIRTUAL REALITY AND ARTIFICIAL INTELLIGENCE FUEL EDTECH

January 24, 2021 – According to the World Economic Forum, educational technology was at the center of public discourse over the past year as the COVID-19 pandemic made remote education

ubiquitous. AR/VR, AI, and wireless tech have been three key technologies powering recent edtech innovations. In the AR/VR space, Curiscope's Virtuali-tee is a t-shirt and app that enables users to learn about the human body. One person puts on the t-shirt while the other uses an AR app on a smartphone to virtually reveal and explore the various layers inside the body. The technology also has benefits for neurodiverse learners. Also in this space is Floreo, a telehealth platform that uses VR headsets to deliver social and behavioral therapy in schools and other settings.

In the AI space, Sparx Maths, a U.K. based company, uses statistics and machine learning to provide personalized math homework. According to Sparx, four hours a week can, on average, increase a student's General Certificate of Secondary Education maths exam result by a grade. Sparx also helps disadvantaged children progress at the same rate as their more advantaged counterparts, reducing the attainment gap. Another AI company, KidSense.AI uses deep learning to offer automatic speech recognition. KidSense is trained using children's voice data and powers the Roybi Robot, an AI-driven smart toy that teaches languages and basic science, technology, engineering, and math skills.

In the Wireless Technologies space, India based Zaya's ClassCloud is a plug-and-play device that provides WiFi connectivity for up to 40 devices in the classroom. It has been used to improve access to high-quality education in rural areas in India by allowing students to download material to a device in the learning environment and take it home with them. Similarly, the offline learning app Kolibri enables content to be seeded onto devices in areas where there is an internet connection – such as a school or a factory – and share it with others over an offline local network.

To promote their vision of Education for All, the World Economic Forum has invited entrepreneurs to their UpLink initiative – an open digital platform that aims to accelerate progress in meeting the United Nations' Sustainable Development Goals. [Source: Natalie Marchant, for The Print]

ADDITIONAL INFORMATION:

[How AR, VR, and AI technology is making education more accessible post-Covid](https://theprint.in/india/education/how-ar-vr-and-ai-technology-is-making-education-more-accessible-post-covid/589752/)

<https://theprint.in/india/education/how-ar-vr-and-ai-technology-is-making-education-more-accessible-post-covid/589752/>

STATE OF DIGITAL ACCESSIBILITY SURVEY

January 22, 2021 – Level Access launched the [State of Digital Accessibility survey](#), which is now in its third year. The survey asks interdisciplinary professionals to describe their organization's commitment to creating inclusive technology, including websites, mobile apps, software, and hardware. Findings from the survey inform the State of Digital Accessibility Report, which provides a comprehensive set of benchmarks for organizations implementing digital accessibility. Jonathan Avila, Chief Accessibility Officer at Level Access, said, "While the [COVID-19] crisis exposed gaps

in accessibility, there were also great stories of organizations closing those gaps quickly. We are eager to see the results of this year's survey to see if the stories we have heard are reflected in the data."

To thank the worldwide community for their participation in the survey, Level Access is donating \$5000 to a disability-focused nonprofit. The nonprofit will be voted on by those who complete the survey. Also, the organizers are sponsoring five individual prizes. Five email addresses will be randomly chosen from those who complete the survey by January 31st. They will each receive either a \$100 VISA gift card or a \$200 donation to a disability-focused nonprofit of their choice. To take the survey, go to [LevelAccess.com/SODAR2021](https://www.levelaccess.com/SODAR2021). [Source: Vienna Va, for Cision, PRWeb]

ADDITIONAL INFORMATION:

[Level Access, G3ict, and IAAP launches 2021 State of Digital Accessibility Survey to benchmark worldwide efforts to create inclusive technology](https://www.prweb.com/releases/level_access_g3ict_and_iaap_launches_2021_state_of_digital_accessibility_survey_to_benchmark_worldwide_efforts_to_create_inclusive_technology/prweb17675545.htm)
https://www.prweb.com/releases/level_access_g3ict_and_iaap_launches_2021_state_of_digital_accessibility_survey_to_benchmark_worldwide_efforts_to_create_inclusive_technology/prweb17675545.htm

CHARITY DONATES TRANSFORMATIVE ASSISTIVE TECH

January 22, 2021 – U.K. based children's charity Lifelites has donated "life-changing" assistive technology worth thousands of pounds for life-limited and children with disabilities using Claire House children's hospice services. Along with training and technical support services that Lifelites provides for free, the assistive equipment costs around £50,000 over four years. After four years, Lifelites aims to replace the equipment with the latest, up-to-date technology most suitable for the children at Claire House. The children cared for at Claire House have life-threatening or life-limiting conditions. The specialist technology that Lifelites has donated can allow them to play, be creative, and control something for themselves, activities they never thought possible. One of the pieces of equipment donated was the POD, a mobile and sensory pop-up tent that offers room for every child, no matter their needs. It comes in a rucksack so that hospice staff can easily bring it to children's own homes, as well. The sensory tent enables life-limited and children with disabilities a respite from their often-stressful lives. They are surrounded by sea animals swimming around them and can listen to built-in calming music. Janet Sutherland Oakes, Director of Clinical Services at Claire House Children's Hospice, said, "We are very grateful to Lifelites for providing this very kind donation. It will help us make bucket list dreams come true and create special memories." [Source: Sarah Sarsby, for AT Today]

ADDITIONAL INFORMATION:

[Charity donates transformative assistive tech to life-limited children at hospice](https://www.prweb.com/releases/charity_donates_transformative_assistive_tech_to_life_limited_children_at_hospice/prweb17675545.htm)

<http://attoday.co.uk/charity-donates-transformative-assistive-tech-to-life-limited-children-at-hospice/>

PUBLIC WORKING DRAFT OF W3C ACCESSIBILITY GUIDELINES (WCAG) 3.0

January 21, 2021 – On January 21st, W3C published its first [working draft](#) of the W3C Accessibility Guidelines (WCAG) 3.0. The guidelines provide recommendations for making web content more accessible to users with disabilities. They help address the needs of users with vision impairments, deafness or hearing loss, limited movement and agility, speech disabilities, sensory disorders, cognitive and learning disabilities, and combinations of these. The guidelines cover various web content types, including static content, interactive content, visual and auditory media, and virtual and augmented reality. They also address related web tools such as user agents (browsers and assistive technologies), content management systems, authoring tools, and testing tools.

Each guideline provides information on accessibility practices that address well-documented user needs of people with disabilities. Each guideline is also tied to outcomes, discussing critical errors and outcome scoring to determine whether the user need has been met. Guidelines are also supported by technology-specific methods to meet each outcome. While WCAG 2 success criteria can be moved to WCAG 3 with minimal changes, there have been updates to the testing and scoring methods. Thus, WCAG 3 proposes a different name, scope, structure, and conformance model from WCAG 2. It is intended to be easier to understand and more flexible than [WCAG 2](#). The flexibility is intended to address different types of web content, apps, and tools, as well as include a broader range of persons with disabilities. Importantly, WCAG 3.0 is not backward compatible with WCAG 2. That means WCAG 3.0 does not supersede WCAG 2.2 and previous versions; it is an alternative set of guidelines. Once these guidelines become a W3C Recommendation, the W3C will advise creators to use WCAG 3.0 for maximum effect.

This First Public Working Draft is an early-stage draft, published to obtain a review of the direction proposed. The Working Group seeks input on the flexible conformance approach, the ease of shifting from WCAG 2 to WCAG 3, and usability, among other questions. Extensive review questions can be found in the blog post-[WCAG 3 FPWD Published](#). The public is encouraged to [file an issue in the W3C silver GitHub repository to leave feedback](#), filing each comment as a separate issue. Alternately, commentors can email public-agwg-comments@w3.org. The Working Group has requested comments on this draft by 26 February 2021. [Source: W3C]

ADDITIONAL INFORMATION:

[W3C Accessibility Guidelines \(WCAG\) 3.0](#)

<https://www.w3.org/TR/wcag-3.0/>

ACCESS TO AIRA, A VISUAL ASSISTANCE APP, IN IRVINE

January 19, 2021 – Social distancing over the pandemic has brought about several challenges for those with visual disabilities. Stacy Branham, assistant professor at the University of California, Irvine, sought to address these problems in partnership with Toyota Motors. Brahman noted a [survey](#) in which food insecurity was one of many concerns for people who are blind or have low vision. “People with visual disabilities often need sighted assistance in the grocery store, but that doesn’t work with social distancing,” Branham said. “Some people who are blind normally order groceries online, but these services quickly became completely backed up with increased demand by the general population.”

Brahman learned about Aira, a smartphone app that connects people who are blind and low-vision to highly trained, remote agents who provide immediate visual assistance, from locating a building number to finding a dropped AirPods. Since the agents are trained, they know how to communicate to facilitate orientation to one’s surroundings and objects therein. However, because Aira requires a smartphone and good connectivity, it’s not universally accessible. The service is free in five-minute increments, but a paid subscription is needed for longer sessions. These obstacles are increasingly problematic during the pandemic when more people experience economic hardship. To support people with visual disabilities, Brahman formed a collaboration with a local independent living center, the Dayle McIntosh Center (DMC), to integrate Aira into the community. DMC is now offering a free Aira subscription to its members and a free smartphone for those in need. Branham’s team offers tech support for setting up the phones and service and will conduct surveys to assess Aira’s impact during the pandemic. “I’m so thankful to Toyota and UCI for partnering with us on this project,” says Larry Wanger, director of DMC, who has been using Aira since 2017. His first experience with the service was at an airport, where he used it to find his gate. “It was pretty amazing,” he says, recalling the independence he felt in not needing to ask anyone at the airport for assistance. “It truly impacts people’s lives. I hope this project helps demonstrate to local county officials that offering Aira is extremely helpful by showcasing the various needs and uses,” says Wanger.

Since the Aira sign-up was launched on Sept. 30, 2020, the team has already honored nearly 300 requests for the service. Brahman is also working to offer Aira to students and faculty with visual disabilities on campus. [Source: Shanni Murray, for University of California, Irvine]

ADDITIONAL INFORMATION:

[Tech for people with visual disabilities](#)

<https://news.uci.edu/2021/01/19/tech-for-people-with-visual-disabilities/>

ASSISTIVE MAGNETIC SKIN SYSTEM

January 18, 2021 – Saudi Arabia, King Abdullah University of Science and Technology (KAUST) students have developed an assistive technology that uses magnetic skin to support freedom of movement for people with quadriplegia. The system relies on the user's facial expressions to accomplish a wide variety of tasks, from moving down the street to using an elevator. There are many assistive technologies for people with quadriplegia, but most rely on head or neck movements to work. For patients with severe quadriplegia, the options are limited to camera, tongue control, voice-assistant, and neural detector systems. These either offer a limited range of gestures or are not compatible with outdoor applications. Some also require invasive attachments or continuous attention while using the system.

The KAUST system includes magnetic skins, smart glasses, a smart wheelchair, and smart gadgets that rely on wireless Bluetooth and infrared communication. Three magnetic skins are placed between the eyebrows and on each side of the nose to track facial movements, such as moving the eyebrows up and down and the nose left and right. These movements are detected by magnetic field sensors in the smart glasses and are converted into electrical signals transmitted to the head unit of the wheelchair. So far, the solution has been lab-tested with a high success rate. "Most existing technologies don't give people a lot of freedom. We wanted to develop a solution that works inside the house as well as outdoors, allowing them to move around independently," says Abdullah Almansouri, a Ph.D. student who worked on the project. [Source: Emily Henderson, for News Medical Life Sciences].

ADDITIONAL INFORMATION:

[Assistive magnetic skin system supports freedom of movement for people with quadriplegia
https://www.news-medical.net/news/20210118/Assistive-magnetic-skin-system-supports-freedom-of-movement-for-people-with-quadruplegia.aspx](https://www.news-medical.net/news/20210118/Assistive-magnetic-skin-system-supports-freedom-of-movement-for-people-with-quadruplegia.aspx)

WEB ACCESSIBILITY PLUG-IN FOR MAJOR WEB DEVELOPMENT PLATFORMS

January 14, 2021 – INNsight, a leading digital marketing system for hotels, is rolling out a plug-in of its patent-pending web accessibility utility to major website development platforms, including WordPress, Wix, Shopify, and Squarespace. The utility is called ADA Tray® and sits on top of web pages as an assistive technology that reportedly helps individuals with mobility, audio, or visual disabilities better engage with any website. INNsight reports that their software made many websites more accessible and improved Americans with Disabilities Act (ADA) compliance. The ADA Tray® offers multiple filters and configurations to make any website more tailored for visitors' audio, visual, and mobility requirements. Raj Patel, CEO of INNsight, says, "We are incredibly excited to roll out our web accessibility technologies to more platforms. When individuals see the

ADA Tray® embedded on a website, they recognize that the web developer has taken web accessibility seriously.” [Source: INNsight for Cision, PR Newswire]

ADDITIONAL INFORMATION:

[INNsight To Launch ADA Tray® 2.1 As A Plug-In On Major Web Development Platforms](https://www.prnewswire.com/news-releases/innsight-to-launch-ada-tray-2-1-as-a-plug-in-on-major-web-development-platforms-301208860.html)

<https://www.prnewswire.com/news-releases/innsight-to-launch-ada-tray-2-1-as-a-plug-in-on-major-web-development-platforms-301208860.html>

SONY’S LIP-READING TECH HAS POTENTIAL FOR ACCESSIBILITY

January 13, 2021 – Sony’s facial-recognition software, Visual Speech Enablement, can now detect conversation without the use of microphones. Mark Hanson, Sony’s VP of Product Technology and Innovation, gave an overview of the technology during a CES keynote. The innovation uses camera sensors and AI for augmented lip reading. Using Sony's Intelligent Vision Image Sensor, the AI isolates a user’s lips and then translates their movements into words, independent of any background or foreground noise. The distance between the sensor and user is nearly inconsequential, and it can work over many feet by using a higher-resolution sensor. Sony initially plans to market the technology for a handful of use cases, such as factory automation, kiosks, and voice-enabled ATMs. When asked about the potential for assistive uses of this technology, such as improving auto-generated captions or reducing the need for a speech-recognition intermediary that requires minimal background noise, Hanson said the software is not optimized for such use cases yet but could be in the future. [Source: Steven Winkelman, for PCMag]

ADDITIONAL INFORMATION:

[Sony's New Lip-Reading Technology Could Boost Accessibility—or Invade Privacy](https://www.pcmag.com/news/sonys-new-lip-reading-technology-could-boost-accessibility-or-invade-privacy)

<https://www.pcmag.com/news/sonys-new-lip-reading-technology-could-boost-accessibility-or-invade-privacy>

FACEBOOK AI AND UT AUSTIN COLLABORATE ON SPEECH SEPARATION RESEARCH

January 12, 2021 – Imagine finding a voice in a noisy crowd. The human perceptual system can effectively reduce auditory ambiguities to identify and isolate an active speaker, but this largely occurs by leveraging visual information. Recent AI research on speech separation has explored ways to associate lip motions in videos with audio, but speakers’ lips are often hidden in busy, multi-speaker environments. Inspired to address this problem, a team from the University of Texas at Austin and Facebook AI Research introduced VisualVoice. VisualVoice is a learning framework that jointly learns audio and visual speech separation and cross-modal speaker embeddings, effectively using a person’s facial appearance to predict their vocal sounds. Its input is a video of a

target speaker in an environment with overlapping voices or sounds, and the output is an isolated soundtrack of the speaker.

The researchers explain that attributes such as gender, age, nationality, and bodyweight — which are present in the face — can inform sound qualities such as tone, pitch, timbre, and basis of articulation. The approach was evaluated on five benchmark datasets for audio-visual speech separation, speech enhancement, and cross-modal speaker verification, using standard metrics. VisualVoice excelled in audio-visual speech separation and enhancement in challenging real-world videos, outperforming state of the art (SOTA) methods on all metrics across all datasets. This speech separation method has practical applications in assistive technology for people with hearing disabilities, wearable AR devices, speech-to-text, and more. Meanwhile, the researchers are fine-tuning the AI code to further enhance speech separation. [Source: Reina Qi Wan, for Synced, AI Technology and Industry Review]

ADDITIONAL INFORMATION:

[VisualVoice Uses Facial Appearance to Boost SOTA in Speech Separation](https://syncedreview.com/2021/01/12/visualvoice-uses-facial-appearance-to-boost-sota-in-speech-separation/)

<https://syncedreview.com/2021/01/12/visualvoice-uses-facial-appearance-to-boost-sota-in-speech-separation/>

UPCOMING EVENTS

A CLOSER LOOK: GUIDANCE FOR BUSINESSES AND EMPLOYERS CONSIDERING THE NEEDS OF PEOPLE WITH DISABILITIES DURING COVID-19

This webinar, produced by the Center for Inclusive Design and Innovation, will convene Wednesday, February 10, 2021, from 2:00 pm to 3:00 pm EST. This is an introductory level webinar intended for anyone interested in learning more about how businesses can continue operations safely while considering the needs of employees and patrons with disabilities during COVID-19. Early registration is required. Registration closes 1 hour before the live webinar begins.

ADDITIONAL INFORMATION:

[Click here](#) to register for this free webinar, and please share with your colleagues, clients, and community. The session will be hosted on Zoom with live captions and ASL interpreters and recorded and archived.

To view the archives of other webinars in this series, please visit the “Webinars and Training” page on the COVID-19 Accessible Materials Project Microsite [COVID-19 Webinars and Training | Center for Inclusive Design and Innovation \(gatech.edu\)](#).

For questions about this webinar or to receive a save the date for other webinars in the series, please contact training@gatfl.gatech.edu.

PUBLIC FORUM TO DETERMINE PROPER ALLOCATION OF FEDERAL BROADBAND FUNDING

January 28, 2021 – The FCC is preparing to implement the Emergency Broadband Benefit Program by convening a virtual roundtable for the public on February 12, 2021. The Emergency Broadband Benefit Program was authorized via the Consolidated Appropriations Act of 2021 and allows eligible households to receive subsidized pricing on the cost of broadband services. The roundtable discussion will be a virtual event available at www.fcc.gov/live. [Source: FCC]

ADDITIONAL INFORMATION:

[FCC Announces Roundtable on Emergency Broadband Benefit Program](#)

<https://www.fcc.gov/document/fcc-announces-roundtable-emergency-broadband-benefit-program>

ASSISTIVE TECHNOLOGY CONFERENCE OF THE NEW ENGLAND REGION (USA)

The COVID-19 pandemic has led to the Assistive Technology Conference of New England (ATCNE) to take a virtual format from November 2020 – May 2021. The upcoming sessions for this quarter include

- Versatile and Engaging Activities for Teaching Language and Literacy to Students with Complex Needs (March 8)
- The Coaching Model: Not Bill's Playbook. How to do Distance with learners Who Won't Watch Your Screen (March 29)
- Fifty Ways to Extend Literacy Encounters with Everyday Technologies (April 6)

ADDITIONAL INFORMATION:

[Assistive Technology Conference of New England](#)

<https://www.assistivetechologyconference.com/2020-presentations/>

RELEASE OF THE ANNUAL REPORT ON DISABILITY STATISTIC COMPENDIUM EVENT

From February 9 – 12, 2021, the Annual Disability Statistics Compendium will be virtually released via Zoom from 12:00 pm to 1:15 pm (ET) each day. The tentative schedule is as follows:

- Day 1 – Release of the Annual Report, Compendium, and State Reports
- Day 2 – Updates on Federal Data Collection Efforts
- Day 3 – Implications of COVID-19 for the Population with Disabilities
- Day 4 – Disability and African Americans

ADDITIONAL INFORMATION:

[Virtual Release of the Annual Disability Statistics Compendium](#)

https://unh.zoom.us/webinar/register/WN_XzukurzsrTuKEXU-Xl368FA?mc_cid=29b8688a27&mc_eid=5591b5babc

TECHNOLOGY AND DISABILITY POLICY HIGHLIGHTS, JANUARY 2021

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The Technology and Disability Policy Highlights (TDPH) is a monthly newsletter that reports on national public policy events and tracks emerging issues of interest to individuals with disabilities, researchers, policymakers, industry, and advocacy professionals. The Wireless RERC is a research center that promotes universal access to wireless technologies and explores their innovative applications in addressing the needs, user experiences, and expectations of people with disabilities. For more information on the Wireless RERC, please visit our website at [\[http://www.wirelessrerc.org\]](http://www.wirelessrerc.org). For further information on items summarized in this report, or if you have items of interest that you would like included in future editions, please contact this edition's editors Salimah LaForce [salimah@cacp.gatech.edu], Dara Bright [dara.bright@cacp.gatech.edu], or Anushri Kumar [anushrik@gatech.edu]. If you wish to update your email address, send an email to salimah@cacp.gatech.edu.

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This newsletter's contents were developed under a grant from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR grant number 90RE5025-01-00). NIDILRR is a Center within the Administration for Community Living (ACL), Department of Health and Human Services (HHS). This newsletter contents do not necessarily represent NIDILRR, ACL, HHS policy, and you should not assume endorsement by the Federal Government.