TECHNOLOGY AND DISABILITY POLICY HIGHLIGHTS - FALL 2019

Click the headings below to link directly to a particular section.

Legislative Activities   Regulatory Activities   Wireless RERC Updates   Other Items of Interest

OVERVIEW

This fall, the country celebrated National Disability Employment Awareness Month (NDEAM) with hosted talks about best practices for employers on how to increase disability inclusion. Numerous organizations hosted events, awareness campaigns, and initiatives in support of NDEAM. Dell convened an "Accessibility Driving Innovation" panel, and Microsoft published videos and blog posts about their vision that accessibility and inclusion are essential for empowering everyone, everywhere.

In the emergency access domain, the Senate Committee on Commerce, Science, and Transportation approved the *Reliable Emergency Alert Distribution Improvement (READI) Act* [**S. 2693**] and sent it to the full Senate for consideration. The READI Act is a bipartisan bill that seeks to guarantee more access to relevant emergency alerts on mobile devices, televisions, and radios. In parallel, the Federal Communications Commission (FCC) Intergovernmental Advisory Committee released its report In the Matter of Multilingual Alerts and provided recommendations to strengthen alerting accessibility. They are in support of "the delivery of video alerts in ASL format or operate in conjunction with some other application to provide that content." The report also noted that Wireless Emergency Alerts could include ASL-translated messages via an embedded URL in the WEA message.

In Wireless RERC news, we submitted a letter to the FCC in support of their initiative to collect data on the geo-targeting capabilities of WEA messages using an embedded link to the survey within the message. We are also pleased to announce that the App Factory project released the Tactile Graphics Helper (TGH) on the App Store, a free iOS app that makes tactile graphics more accessible to people with visual disabilities. Finally, after 15 years with the Wireless RERC, we bid Ben Lippincott farewell as he gears up to work on three NIDILRR funded projects. Though we are sad to see Ben leave, we are excited that he will continue his work in the access and inclusion field. Ben said, "It truly has been an honor to get to work with all of my colleagues at the Wireless RERC. I have been spoiled, getting to collaborate with and learn from the best and brightest in the fields of technology, usability, accessibility, and disability."

This issue also includes news about broadband performance, Project Understood, Accessible Gaming, the Media Access Awards, brain-computer interfaces, wireless body networks, AI for Accessibility, wearables, IoT, and more.

LEGISLATIVE ACTIVITIES

THE READI ACT IS READY FOR CONGRESS

November 14, 2019 – In October, Senators Brian Schatz (D-HI) and John Thune (R-SD) reintroduced the *Reliable Emergency Alert Distribution Improvement (READI) Act* [**S. 2693**], and on November 12th, the Senate Committee on Commerce, Science, and Transportation approved READI and sent it to the full Senate for consideration. The READI Act is a bipartisan bill that seeks to guarantee that more people have access to relevant emergency alerts on their mobile devices, televisions, and radios. The READI Act also aims to expand the number of ways that the federal government alerts the public of emergencies through digital communications such as online video and audio streaming services. The READI Act has established evaluation measures within the legislation that tracks and studies false alerts when they occur and improve the way states plan for emergency alerts. Several industry stakeholders have already publicized their support of these efforts, including the Wireless Infrastructure Association, NCTA – The Internet and Television Association, the National Association of Broadcasters, and the Internet Association. [Sources: Senate Committee on Commerce, Science, and Transportation; Inside Towers]

ADDITIONAL INFORMATION:

Committee Approves 20 Bills, Four Nominees, Coast Guard Promotions

https://www.commerce.senate.gov/2019/11/committee-approves-20-bills-four-nominees-coast-guard-promotions

Reliable Emergency Alert Distribution Improvement (READI) Act

https://www.congress.gov/116/bills/s2693/BILLS-116s2693is.pdf

Senate Committee Approves READI Act

https://insidetowers.com/cell-tower-news-senate-committee-approves-readi-act/

REGULATORY ACTIVITIES

EMERGENCY ALERTING FOR PEOPLE WITH DISABILITIES

November 7, 2019 - The FCC's Intergovernmental Advisory Committee released its report on Multilingual Alerts and provided recommendations to strengthen access to alerting for people with disabilities. In addition to developing best practices for notification improvement for individuals with a wide range of disabilities, including people who are Deaf and whose primary language is American Sign Language (ASL), the report recommends that government officials develop rules and/or programs to conduct outreach to identify the location of individuals with disabilities, not only at their homes, but also at designated community gathering locations such as schools, centers for the deaf and blind, special needs facilities, and support facilities.

According to the report, to accomplish this, government officials must first identify what notification systems are in use, identify what is working and what needs to be improved, and support efforts to create a notification plan with the supervisors of each center. The second recommendation from the report encourages the use of census data, community outreach, local demographics surveys, meetings with local health and human service providers, and other stakeholders to identify the needs of individuals with disabilities.

Finally, the intergovernmental advisory committee suggests that the government work with local media, ISP's and other parties who receive EAS messages to improve notification methods and timeliness to the entire community, including individuals with disabilities and encourage local 911 centers, media outlets, and EAS Participants to keep their equipment current. Looking forward, they are "Encouraging EAS Participants and states to, as technology improves, to enable the delivery of video alerts in ASL format or operate in conjunction with some other application to provide that content." The Report noted that Wireless Emergency Alerts could include ASL-translated video alerting via an embedded URL in the WEA message.

ADDITIONAL INFORMATION:

Multilingual Alerts Report: Pdf

FCC Issues Public Safety and Telehealth Reports from Its Intergovernmental Advisory Committee

https://www.fcc.gov/document/fcc-issues-advisory-committee-public-safety-and-telehealth-reports

MEASURING BROADBAND PERFORMANCE

October 4, 2019 – The FCC released an *Order on Reconsideration* [**WC Docket No. 10-90**] regarding the Connect America Fund (CAF) program that sought to provide high-speed broadband networks to underserved Americans. The funds are deployed to service carriers who are tasked with building fast and responsive physical networks in rural America. There is a higher prevalence of disability in rural America compared to urban areas[1], and the adoption of broadband services is correlated with its perceived utility. As such, the performance of these networks is one of the critical factors impacting adoption rates among underserved populations.

Consequently, the FCC requires that these carriers measure network performance to ensure that they meet the objective of quality high-speed internet. These carriers must then report the results to the Universal Service Administrative Company and the relevant state (or Tribal government). In 2018, several carriers and industry associates petitioned the Bureaus for a review of the testing methodologies and requirements. The Order on Reconsideration responds to this petition and makes

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[1] Caruthers, A. (2017). Disability in rural America. Retrieved from
https://www.communitycommons.org/2017/02/disability-in-rural-america/

targeted modifications to the testing procedures that are "flexible enough for carriers of any size to comply with the testing rules without" unnecessary costs. The adopted modifications to the performance measure requirements include measuring speed and latency on each ETC's access network from the end-user interface to the nearest Internet access point. The Order on Reconsideration also clarifies which facilities qualify as FCC-designated Internet Exchange Points. Further, the Order on Reconsideration establishes a daily testing period for speed and latency tests between 6:00 pm and 12:00 am including weekends. As it pertains to testing periods, speed tests do not have to start at the beginning of each test hour. But providers must conduct and report at least one download test and one upload speed test per testing hour at each subscriber test location. Finally, the Order on Reconsideration discusses remedies for non-compliance. For further reading on the revisions, please see the full document under additional information. [Source: FCC]

ADDITIONAL INFORMATION:

Enforcing Rural Broadband Quality Standards

https://www.fcc.gov/document/enforcing-rural-broadband-quality-standards

TELECOMMUNICATIONS FOR PEOPLE WITH HEARING DISABILITIES

September 2019 - The FCC released a Report and Order and Further Notice of Proposed Rulemaking [**CG Docket No. 03-123**] pertaining to the definition of Telecommunications Relay Services (TRS) and speech-to-speech services. Due to the change in market practices concerning billing rates for long-distance calls, the Commission seeks to eliminate the requirements for (a) equal access and billing options for long-distance TRS calls and (b) publishing notice of applications of state relay programs in Federal Register. The equal access and billing requirement refer to the process in which TRS users were protected and charged competitive rates for long-distance calls. Reportedly, the rule has become obsolete in an era where voice telephone subscribers typically pay a bundled or flat rate for telephone services, regardless of time or distance differentials. Further, the FCC argued that special mandates regarding long-distance carriage are no longer necessary to have parity with voice telephone users.

The FCC also seeks to repeal the billing options requirement. Given the current market conditions, it is unlikely that TRS providers will assess per minute charges for wireline calls. The existence of per-minute charges triggered a need for different billing options. The FCC argues that by eliminating this obligation of providing billing options that are unused, it will increase TRS' efficiency because it will relieve "TRS providers from the need to maintain obsolete features of circuit-switched networks at a time when they and others within the communications industry have been transitioning to IP-based platforms." Before implementing this ruling, the FCC requests that interested stakeholders provide comments within 21 days after date of publication in the Federal Register, and reply comments within 35 days after date of publication in the Federal Register [Source: FCC]

ADDITIONAL INFORMATION:

[TRS Report and Order and Further Notice of Proposed Rulemaking](https://docs.fcc.gov/public/attachments/FCC-19-90A1.pdf)
https://docs.fcc.gov/public/attachments/FCC-19-90A1.pdf

WIRELESS RERC UPDATES

Wireless RERC Bids Farewell to Longtime Project Partner, Ben Lippincott

After 15 years with the Wireless RERC, we bid Ben Lippincott farewell as he gears up to work on three NIDILRR funded projects. Ben will be working on two RERC's, the LiveWell RERC and the mRehab RERC at the Shepherd Center, and leading usability studies for the new App Factory Disability and Rehabilitation Research Project (DRRP). Ben is a project coordinator at the Shepherd Center, but on the Wireless RERC he has served as both a task leader and project director over the past 15 years. Ben says his favorite Wireless RERC initiatives were the consumer education series of Wireless Independence (WIN) workshops, a collaboration with AT&T; being a member of the Alliance for Telecommunication Industry Solutions (ATIS) hearing aid compatibility working group, and producing educational videos aimed at informing consumers of accessibility features and how to use off-the-shelf wireless technologies. When asked for his personal philosophy on inclusion, technology, and accessibility for people with disabilities, Ben said, "Go all in on accessibility early! Having the most accessible product or service from the outset ensures it is usable by a diverse group of people. Accessibility can really become a marketing point and a positive differentiator in a crowded marketplace. As a person with a disability, I never thought I would become an advocate for inclusion and accessibility as much as I have, and my roles through the Wireless RERC over the years have allowed me to do that."

Ben's early work with the Wireless RERC was on a project called the Mobile Accessibility Guide (MAG). The MAG concept was to crowdsource accessibility barriers people encountered as they traversed their communities. However, the MAG was way ahead of its time, even ahead of the terms "crowdsourced" or "user-generated content." Today, there are dozens of versions of mobile apps and mapping tools that accumulate crowdsourced accessibility information, and we are proud to have been part of the pioneering work that has led to improved mobility and independence of people with disabilities. Though we are sad to see Ben leave the Wireless RERC, we are excited that he will continue his work in the access and inclusion field. Ben said, "It truly has been an honor to get to work with all of my colleagues at the Wireless RERC. I have been spoiled, getting to collaborate with and learn from the best and brightest in the fields of technology, usability, accessibility, and disability." We share the sentiment, as Ben was one of our best and brightest, too.

Wireless RERC on the Record: Survey Dissemination via a WEA Message

October 21, 2019 - The Wireless RERC submitted a letter to the FCC responding to their notice regarding *Information Collection Being Reviewed by the Federal Communications Commission: Enhanced Geo-Targeted Wireless Emergency Alerts* [**WT Docket No. 10-254: DA 12-1745**]. Our comments supported the FCC's initiative to collect data on the geo-targeting capabilities of WEA messages using an embedded link to the survey within the message. The proposed data collection method will improve the ecological validity of the survey results, as the survey will be taken in an uncontrived setting. Our comments also recommend the FCC, at a later date, consider collecting data on factors impacting WEA efficacy for people with disabilities.

ADDITIONAL INFORMATION:

Read the Letter

10.2019_wrerc_letter_to_fcc_survey_wea_performance.pdf

TACTILE GRAPHICS HELPER AVAILABLE NOW IN THE APPLE APP STORE!
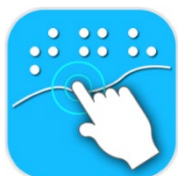
October 3, 2019 - The Rehabilitation Engineering Research Center for Wireless Inclusive Technologies' (Wireless RERC) App Factory project team is pleased to announce the release of the Tactile Graphics Helper (TGH) on the App Store. TGH was developed by researchers at the Smith-Kettlewell Eye Research Institute led by James Coughlan, Ph.D. TGH is a free iOS app that makes tactile graphics more accessible to people with visual impairments. The basic idea of TGH is to track the user's pointing finger as they explore a tactile graphic, like a map or the periodic table, announcing text-to-speech information about the location they are touching.

The Tactile Graphics Helper (TGH) is highly accessible to blind and low vision users and is intended to help them learn "graphicacy" (literacy with Tactile Graphics). Tactile graphics use raised lines, textures, and elevations to provide individuals with visual disabilities access to graphical materials through touch. Tactile graphics are particularly important for students in science, technology, engineering, and mathematics (STEM) fields, where educational content is often conveyed using diagrams and charts. However, providing a student who has a visual disability with a tactile graphic does not automatically provide the student access to the graphic's educational content. Instead, the student may struggle to decipher subtle differences between textures or line styles and must deal with cramped and confusing placement of lines and braille. These format-related issues prevent students with visual disabilities from accessing educational content in graphics independently, because they oblige the students to ask for sighted clarification. The TGH app makes tactile graphics more accessible and might also be of significant benefit to students without recognized disabilities by facilitating a multi-modal (visual, tactile, and audio) interaction with tactile graphics.

Please note that in its current (beta) version, TGH requires assistance from a sighted person to aim the camera properly on the tripod before the app is used.

Helpful information on how to use TGH can be found here: https://tactilegraphicshelper.wordpress.com

TACTILE GRAPHICS HELPER for iOS is available now: https://apps.apple.com/us/app/tactile-graphics-helper/id1469997677

OTHER ITEMS OF INTEREST

CANADIAN PROGRAM AIMS TO MAKE VOICE ASSISTANTS MORE INCLUSIVE

November 20, 2019 - Voice assistants, also known as smart assistants, have greatly evolved since their introduction to the market; however, they are not without flaw. Smart assistants struggle to correctly identify the speech of users with different speech patterns and those with heavy accents. Thus, the emergence of the Canadian Down Syndrome Society's (CDSS) program "Project Understood." This program was developed in collaboration with Google to ensure that smart assistant algorithms include the speech patterns of people with Down Syndrome.

The CDSS program is creating a database of voices to help the smart assistants' by inviting users with Down Syndrome to "donate" their voices to Google. In this procedure, the users record various words and phrases to teach the AI algorithms how to recognize common words used by someone with Down Syndrome. The Google AI voice database only improves by having a diverse collection of speech patterns, and so CDSS has opened the opportunity for the public to help. Those interested in helping can do so at projectunderstood.ca. [Source: Patrick Hearn via Digital Trends]

ADDITIONAL INFORMATION:
Project Understood improves Google's voice recognition for those with Down syndrome
https://www.digitaltrends.com/news/project-understood-lets-people-with-down-syndrome-improve-google/

AFFORDABLE INPUT BUTTON FOR XBOX

November 18, 2019 - Technology company, Logitech, developed an Adaptive Gaming Kit that is compatible with the Xbox Adaptive Controller. This kit is an adaptive add-on for the controller to expand accessibility for users with disabilities. The Adaptive Gaming Kit has three small buttons and three big buttons with mechanical switches, four light-touch buttons, two variable trigger controls, configurable game mats, custom labels, and Velcro ties. The kit makes the Xbox Adaptive more accessible because of its increased affordability at $100. Logitech Gaming company noted that "The availability of accessories is limited; for example, the cost of individual buttons can start at $40 each

and go up from there. This can quickly become complicated and expensive. We realized that if we wanted gaming to be more inclusive, then a simpler solution with a lower barrier to entry was required. Therefore, Logitech G worked with Microsoft and select organizations, like SpecialEffect, AbleGamers, and Mt. Sinai's Abilities Research Center, to create a new offering — the Logitech G Adaptive Gaming Kit. It is designed to be a simple, flexible, and robust solution to further expand the possibilities of play on the Xbox Adaptive Controller." [Source: Tony Polanco via Geek; Georgina Torbet via Engadget]

ADDITIONAL INFORMATION:

Logitech's Adaptive Gaming Kit Makes the Xbox Adaptive Controller More Accessible
https://www.geek.com/games/logitechs-adaptive-gaming-kit-makes-the-xbox-adaptive-controller-more-accessible-1810838/
Logitech unveils an affordable button kit for the Xbox Adaptive Controller
https://www.engadget.com/2019/11/18/logitech-adaptive-gaming-kit/

2019 MEDIA ACCESS AWARDS

November 16, 2019 - Hollywood recently commemorated actors and actresses who have "redefined representation for the disability community." The 2019 Media Access Awards was particularly special because it marked its 40th-anniversary celebrating people who make a difference in on-screen representation of the disability community. Deborah Calla and Allen Rucker, Co-CEOs of the Media Access Awards said, "Changing the way people view disabilities begins with shifting the culture around the on-screen representation of this minority group and continues by opening doors to opportunities to ensure inclusivity. The honorees of this year's awards are driving today's representation, spreading inclusion and diversity, and paving the road for the future." This year's outstanding honorees include individuals and organizations in eight different categories. And the winners are:

- "The Peanut Butter Falcon" producers Albert Berger, Christopher Lemole, Lije Sarki, David Thies, Ron Yerxa and Tim Zajaros with the Producers Guild of America George Sunga Award;
- Jay Ruderman of the Ruderman Foundation with the Screen Actors Guild-American Federation of Television and Radio Artists (SAG-AFTRA) Disability Awareness Award;
- "America's Next Top Model" winner Nyle DiMarco with the SAG-AFTRA Harold Russell Award;
- "NCIS: New Orleans" writer Katherine Beattie with Writers Guild West Evan Somers Memorial Award;
- "New Amsterdam" casting directors David Caparelliotis and Lauren Port with Casting Society of America Award;
- "The Good Doctor" writers and producers Erin Gunn, Mark Rozeman, David Renaud and David Shore with the Visionary Award; and

- "Give Me Liberty" actress Lauren "Lolo" Spencer with the Christopher Reeve Acting Scholarship. [Source: Lorraine Wheat via Variety]

ADDITIONAL INFORMATION:

Media Access Awards Honors Individuals Increasing Representation for Disabilities
https://variety.com/2019/biz/news/media-access-awards-winners-1203406997/

2GETHER-INTERNATIONAL'S INITIATIVE SUPPORTS ENTREPRENEURS WITH DISABILITIES

November 8, 2019 - The 2Gether-International not-for-profit seeks to support entrepreneurs with disabilities by helping them take their entrepreneurship skills and transform them into self-employment opportunities. They proudly tout their approach to achieving the mission as active listening, pride, and entrepreneurship. Founded in 2012, they have evolved as an organization and now host peer-to-peer support groups, workshops, career coaching, and referral services to help people with disabilities in D.C. conceptualize and implement their business ideas. Recently, the DC Deputy Mayor's Office for Planning and Economic Development awarded 2Gether-International with a $75,000 grant to develop a three-month accelerator program for six local businesspersons with disabilities. The grant will allow 2Gether-International to track progress, assess its support systems by evaluating growth, and apply the results to other programming efforts. [Source: Global Accessibility News]

ADDITIONAL INFORMATION:

2Gether-International is Creating an Accelerator Program for Entrepreneurs with Disabilities
http://globalaccessibilitynews.com/2019/11/08/2gether-international-is-creating-an-accelerator-program-for-entrepreneurs-with-disabilities/

NATIONAL DISABILITY EMPLOYMENT AWARENESS MONTH

October 2019 - October was National Disability Employment Awareness Month (NDEAM), which is an annual celebration that sets aside time to acknowledge and honor the contributions of workers with disabilities on America's workplaces and economy. It is also an opportunity to reflect on growth areas that will increase workplace inclusivity. The theme, as identified by the U.S. Department of Labor (DoL), is "The Right Talent, Right Now." NDEAM is led by the DoL's Office of Disability Employment Policy (ODEP). In support of the disability inclusion initiatives that are spurred by grassroots efforts, ODEP-funded Employer Assistance and Resource Network on Disability Inclusion (EARN) provides the *Primer on Disability Inclusion* which includes guidance and best practices for employers to glean the benefits of disability diversity and foster an "inclusive workplace culture." The *Primer on Disability Inclusion* will also provide strategies that employers can utilize across operational areas, based on the employer framework.

Around the country, many entities celebrated NDEAM. The U.S. Department of Veterans Affairs' Veterans Benefits Administration's (VBA) and the Vocational Rehabilitation and Employment (VR&E) Service hosted a Facebook Town Hall. This event emphasized the programs and ways in which VR&E helps Veterans with disabilities address employment barriers in their careers. The VR&E also hosted disability employment-related training events for employees. Below is a "short" list of this year's NDEAM events and initiatives:

- American Airlines printed custom coffee sleeves with mental wellness resources.
- Boeing commenced a company-wide Self-ID campaign for disability and veteran status, including electronic messaging, posters, and virtual lunch and learn presentations.
- CVS Health invited Dr. Hyong Un, Chief Psychiatric Officer, Aetna Behavioral Health, to share his insight on non-apparent disabilities.
- Dell hosted a series of events, including an "Accessibility Driving Innovation" panel with Dell, Microsoft, and General Motors.
- Microsoft published various videos and blog posts about their vision that accessibility and inclusion are essential for empowering everyone, everywhere. In addition, Microsoft is teaming up with Disability:IN Washington to host the DisAbility Employment Symposium.
- Merck hosted a variety of events, including an Economic Impact Summit, to discuss the importance of diversity, which is critical for innovation and scientific excellence as well as an Innovation Lab, modeled after Disability:IN NextGen Leaders.
- Pratt & Whitney launched the "Faces of Ability" campaign with awareness posters and intranet articles spotlighting employees sharing their disability stories.
- Raytheon hosted a series of live broadcasts on mental health, a Disability Awareness Fair, and many other inclusion-related activities.
- TD Bank is advancing its "Project Search" initiative, which serves students with intellectual and developmental disabilities in helping them transition from school to work.
- Thermo Fisher hosted an event on World Mental Health Day with Facebook and Leslie Wilson, Inclusion Works VP from Disability:IN.
- Ultimate Software hosted a conversation about Disability, Accessibility, Diversity, and Belonging on their People First Podcast.
- Voya Financial sent an all-employee awareness email on disability inclusion, share employee stories, and remind employees of the company's inclusive policies and benefits.
- Walmart has integrated an immersive learning experience to raise awareness of unconscious bias related to disability in their Inclusive Leadership Education curriculum.[Sources: Disability:IN; US Department of Veterans Affair; U.S. Department of Labor]

ADDITIONAL INFORMATION:

National Disability Employment Awareness Month 2019

https://www.dol.gov/odep/topics/ndeam/

Disability:IN

https://myemail.constantcontact.com/October-is-Disability-Employment-Month.html?soid=1120194250033&aid=4pIFkuVtKWY

EARN's Primer on Disability Inclusion

https://askearn.org/earns-primer-on-disability-inclusion/

VR&E supports National Disability Employment Awareness Month

https://www.blogs.va.gov/VAntage/67529/vre-supports-national-disability-employment-awareness-month/

INCLUSION SERIES TO IMPROVE EQUITY IN NONPROFIT & PHILANTHROPIC ORGANIZATIONS

October 24, 2019 – A recently published report, *Disability in Philanthropy & Nonprofits: A Study on the Inclusion and Exclusion of the 1-in-5 People Who Live with a Disability and What You Can Do to Make Things Better*, found that 75% of the philanthropy and nonprofit sector wanted to increase their inclusivity to people with disabilities, but they were uncertain how. In response to this finding, 18 philanthropic and nonprofit organizations present a series of free online training sessions that provide insight on how to include people with disabilities in philanthropy and nonprofits. These sessions seek to close the gap where industries desire diversity but have not had positive outcomes for people with disabilities. Upcoming sessions include:

- How to Ensure A Welcoming Lexicon and Inclusive Storytelling: December 11
- How to Ensure Accessible Websites, Social Media and Inclusive Photos: January 7
- Premium Skills Workshop in Social Media Accessibility: January 9
- How to Ensure Legal Rights and Compliance Obligations: January 15

The collaborating organizations for this initiative include: RespectAbility, in partnership with leading thinkers around equity in the philanthropic and nonprofit space such as BoardSource, The California Wellness Foundation, Center for Disaster Philanthropy, Cerebral Palsy Foundation, The Divas with Disabilities Project, National Center of Disability Journalism, The New York Women's Foundation, and many more. [Source: PRNewswire]

ADDITIONAL INFORMATION:

18 Philanthropy and Nonprofit Organizations Join Together to Advance Access for People with Disabilities

https://www.prnewswire.com/news-releases/18-philanthropy-and-nonprofit-organizations-join-together-to-advance-access-for-people-with-disabilities-300945129.html

Webinar Registration

https://zoom.us/webinar/register/WN_8n2aNjSsR-eRNRDDaghQbQ

BRAIN-COMPUTER INTERFACE IN FRANCE

October 21, 2019 - In Grenoble, France, clinical scientists at the Brain-Computer Interface (BCI) Project at Clinatec have developed an implantable wireless device that has allowed a person with tetraplegia to obtain control over their body. The objective of this technology is to return greater mobility to individuals with motor disabilities.

Tetraplegia refers to a spinal cord injury above the first thoracic vertebra, or within the cervical sections of C1-C8. It is a paralysis that results in a partial or total loss of all four limbs and torso. The loss is usually sensory and motor. The latest implantable wireless device records brain activity in real-time, and the responsive impulses move the exoskeleton. As a result of this wearable device, the individual was able to walk and control both arms. The study's extensive methodology and results were published in the Lancet Neurology journal. [Sources: Benabid, et al., Zawn Villines, EET India, Design, Productions and Applications on the Net]

ADDITIONAL INFORMATION:

An exoskeleton controlled by an epidural wireless brain–machine interface in a tetraplegic patient: a proof-of-concept demonstration

https://www.thelancet.com/journals/laneur/article/PIIS1474-4422(19)30321-7/fulltext?utm_campaign=tlnexoskeleton&utm_content=102440317&utm_medium=social&utm_source=twitter&hss_channel=tw-27013292#seccestitle10

Paraplegic, Quadriplegic | Tetraplegia vs. Quadriplegia vs. Paraplegia

https://www.spinalcord.com/blog/tetraplegia-quadriplegia-paraplegia-what-is-the-difference

Brain Implant Mobilises Tetraplegic

https://www.eetindia.co.in/news/article/Brain-Implant-Mobilises-Tetraplegic

http://www.dpaonthenet.net/article/175126/Mind-reading-exoskeleton-allows-disabled-man-to-move.aspx

Mind-reading exoskeleton allows disabled man to move

https://www.thelancet.com/journals/laneur/article/PIIS1474-4422(19)30321-7/fulltext?utm_campaign=tlnexoskeleton&utm_content=102440317&utm_medium=social&utm_source=twitter&hss_channel=tw-27013292#seccestitle10

WIRELESS MEDICAL TECHNOLOGY IMPROVES QUALITY OF CARE

October 21, 2019 - Despite the Internet of Things' ability to alter how medical healthcare professionals keep patients safe and healthy at affordable costs, compared to other industries, the healthcare industry has not adopted IoT technologies at similar rates. As IoT is constantly evolving, it can facilitate the monitoring of healthcare regimens and biofeedback to notify caregivers and alert healthcare providers with timely data that allows them to address the issue before it becomes critical.

IoT in the healthcare context can help fill the gap between doctor's visits and contribute to continuity of care and improved outcomes.

One such IoT application that is increasingly growing in the medical field is Wireless Body Area Networks (WBANs). WBANS are sensors that are attached to a person's body. The sensors are typically placed in multiple places on the body and are interconnected through a wireless communication channel. Some common examples include the early detection, prevention, and monitoring of diseases, elderly assistance at home, and rehabilitation after surgery. Other uses of WBANs include biofeedback applications that measure emotional states and independent living applications that improve the quality of life for people with disabilities. As the demand for IoT, WBANs specifically, increases in the medical field, medical professionals are encountering several major challenges with implementation. Some of these challenges include transmission reliability and data latency, battery life, interference, and data security.

To mitigate these concerns, IoT designers must consider and address them in their design process. Further, the battery life of WBANs devices must demonstrate that they can maintain enough power consumption before deployment. Other challenges show that wireless technology devices must ensure reliable network performance and the highest level of security for patient data. The growing potential for wireless medical applications highlights the pressing need to resolve these challenges so that the quality of care, efficiency, patient comfort, and reduced medical errors can be actualized. [Source: Janet Ooi via MedTech Intelligence]

ADDITIONAL INFORMATION:

Making the IoT Work in Smart Humans

https://www.medtechintelligence.com/feature_article/making-the-iot-work-in-smart-humans/

Wireless Body Area Networks (WBANs)

https://www.waves.intec.ugent.be/research/wireless/wbans

PILOT PROGRAM AIMS TO MITIGATE MOBILITY BARRIERS FOR PEOPLE WITH DISABILITIES

October 18, 2019 - Boulder County Transportation is implementing a program entitled Mobility for All, which provides affordable multimodal transportation options for older adults and people with disabilities. Boulder County recently released a notice that the program is looking for volunteers for the peer-to-peer mobility assistance program. The recruitment areas include Boulder, Erie, Lafayette, Longmont, Louisville, Superior, and the mountain communities. The Mobility for All program seeks four older adults and people with disabilities from each of these recruitment areas.

These individuals will be Mobility for All Technology Ambassadors who assist older individuals and people with disabilities in a series of activities that will extend the knowledge and use of technology-based transportation options. For instance, Ambassadors will utilize this project to address mobility

challenges related to smartphone applications such as the use of Google Maps, Lyft, Uber, and Transit App. The ambassadors will also teach older adults and people with disabilities how to plan trips and access transportation options. To participate, ambassadors must attend 20-hours of technology training this fall, and on Jan. 1, ambassadors will be expected to contribute five hours of work per month. [Source: Kristina Pritchett via Colorado Daily]

ADDITIONAL INFORMATION:

Boulder County seeks volunteers for pilot program
https://www.coloradodaily.com/2019/10/18/boulder-county-seeks-volunteers-for-pilot-program/

MICROSOFT FUNDING FOR TECH COMPANIES FOCUSED ON ACCESSIBILITY

October 17, 2019 - Microsoft's AI for Accessibility grants seek to encourage the development of advanced technology for people with disabilities. The grants are aimed at companies with the desire to improve accessibility through the use of technology but lack in financial capital. The applications are accepted perennially, and grantees explore the value of AI and machine learning for people with disabilities. One highlighted 2019 grantee, ObjectiveEd, is developing an iPad-based elementary school curriculum for students with vision impairment that's also usable by students without vision disabilities. This development is particularly timely as the teaching of Braille is declining. There are also inadequate resources for students with vision disabilities to access expensive Braille displays. Thus, the rise of the speech-to-text accuracy program is pertinent. This tool is delivered through wireless technology devices such as iPad, and ObjectiveEd is making the curriculum easily deployable for teachers. Other grantees of Microsoft's 2019 AI for Accessibility awards include:

- AbiliTrek: A platform for the disability community to rate and review the accessibility of any establishment, with the ability to tailor search results to the specific needs of any individual.
- Azur Tech Concept – SmartEar: A service that actively listens for environmental sounds (i.e., doorbell, fire alarm, phone call) and retransmits them in colored flashes on small portable boxes or smart phone to support the deaf community.
- Balance for Autism – Financial Accessibility: An interactive program that provides information and activities designed to better match people with programs and services.
- City University of London – The ORBIT: Developing a data set to train AI systems for personalizing object recognition.
- Communote – BeatCaps: A new form of transcription that uses beat tracking to generate subtitles that visualize the rhythm of the music. These visualizations allow people who are deaf and hard of hearing a novel way to experience music.
- Filmgsindl GmbH – EVE: A system that recognizes speech and generates automatic live subtitles for people with a hearing disability.

- Humanistic Co-Design: A cooperative of individuals, organizations, and institutions working together to increase awareness about how designers, makers, and engineers can apply their skills in collaboration with people who have disabilities.
- iMerciv – MapinHood: A Toronto-based startup developing a navigation app for pedestrians who are blind or have low vision and want to choose the routes they take if they're walking to work or any other destination.
- inABLE and I-Stem – I-Assistant: A service that uses text-to-speech, speech recognition, and AI to give students a more interactive and conversational alternative to in-person testing in the classroom.
- Open University – ADMINS: A chatbot that provides administrative support for people with disabilities who have difficulty filling out online academic forms. [Source: Devin Coldewey]

ADDITIONAL INFORMATION:

Microsoft accessibility grants go out to companies aiming to improve tech for people with disabilities

https://techcrunch.com/2019/10/17/microsoft-accessibility-grants-go-out-to-companies-aiming-to-improve-tech-for-the-disabled/

INCONSPICUOUS WEARABLE DEVICE TO IMPROVE KNOWLEDGE OF MENTAL ILLNESS

October 16, 2019 - At the University of Massachusetts Amherst, two tech-based health researchers received a grant from the National Institutes of Health (NIH) to develop a wireless device that informs treatment and knowledge of schizophrenia. Scientists are still discovering the nuances and characteristics of schizophrenia. It is often identified as a chronic mental disorder that affects a person's processing, emotions, and behavior. It begins with subtle idiosyncrasies in one's everyday behavior, which makes it difficult for doctors to observe in a clinical setting. To further the field's knowledge of schizophrenia, the UMass researchers explain that people with schizophrenia whose symptoms are not controlled typically create distance between themselves and other people.

The new wireless device that is designed to look like a necklace can track information about the patients. The UMass researchers will glean data about the patient, such as how far they stand from others and their breathing and movement as they interact – and whether the distance differs among family members, friends, co-workers, and strangers. This information can help doctors determine how well medication is working and whether other therapies and interventions would be beneficial and improve quality of life. The wireless device seeks to quantify the effects of schizophrenia and how to provide the appropriate care, which has vast implications for mental illnesses that have hard to observe signs and symptoms. [Source: Lee via UMass Amherst]

WIRELESS TECHNOLOGY SPURS USE OF IOT DEVICES

October 8, 2019 - The wireless technology market is making substantial developments. A recent report by ABI Research found that the IoT market will represent 31% of Bluetooth-enabled and 27% of Wi-Fi-enabled device sale shipments in 2024. The report indicated that these values were up from 13% and 10%, respectively, in 2018. The share of smartphones as a proportion of Wi-Fi device shipments are predicted to fall below 40% by 2024. This data from the ABI research report highlights the expansion of IoT devices, particularly Bluetooth devices, as developers anticipate utilizing Bluetooth devices for asset management and location services such as beacons and personal trackers. The ABI report shows that these devices are expected to grow to 8.5% by 2024 from 2% in 2018.

The Bluetooth wireless device market is expected to balloon as additional uses are being considered. Developers are steadily creating Bluetooth enabled wearable devices, and the ABI report predicts that these devices will break the 400 million device barrier by 2024. These wearable devices include accessibility devices, traction in smartwatches, activity trackers, smart clothing, and wearables. The ABI assessment also showed that Wi-Fi would likely grow exponentially. Specifically, the ABI report discusses Wi-Fi 6, the next-generation standard in WiFi technology. It is considered a better and faster internet service to accommodate the increased number of devices connected to WiFi. According to ABI, Wi-Fi 6 has great potential in the IoT space, but the transition for providers from the current status quo may take additional time. [Source: David Deans via Telecoms]

APP FOR CHILDREN WITH DEVELOPMENTAL DISABILITIES

October 7, 2019– In Houston, Texas, two major airports—George Bush Intercontinental Airport (IAH) and William P. Hobby Airport (HOU)—have released an app that seeks to improve the airport experience for children with developmental disabilities. The app, Access Houston Airports, provides these children with a set of tools that teach about the airport and includes explorer guides and short

picture stories describing airport spaces. The app can help remove uncertainty about the airport and reduce travel-related stress. [Source: Chloe Greenbank via Regional Gateway]

ADDITIONAL INFORMATION:

Houston airports roll out app for children with developmental disabilities
https://www.hmgaerospace.com/news/regional-gateway/houston-airports-roll-out-app-for-children-with-developmental-disabilities/

WEARABLE WIRELESS DEVICES HELP WITH ACCESSIBILITY

October 2, 2019 - A collaborative research project on wireless electronics by researchers at the Georgia Institute of Technology, University of Kent, and Wichita State University explored the use of a Bluetooth enable wearable device on people with disabilities. The project sought to design and test a portable electroencephalogram (EEG) system for a broad range of assistive devices, smart home systems, and neuro-gaming interfaces through a wearable brain-machine interface (BMI) that resembles a fabric headband.

The BMI developed by the team of scientists and engineers is a form of rehabilitation technology that allows those with motor disabilities to control prosthetic systems. The BMI technology works through brain signals called Steady-State Virtually Evoked Potentials (SSVEP). Traditional EEGs used to capture these signals requires the use of an electrode-studded hair cap, wet electrodes, adhesives, and wires to connect with computer equipment that interprets the signals. However, the team's novel design miniaturizes the components for more practical use. Using the BMI headband, the recorded EEG data is wirelessly delivered to a tablet computer via Bluetooth that can be up to 50 feet away.

The team is still in the development phase and have found one particularly pronounced challenge: detecting and analyzing the SSVEP signals. This concern pertains to the low signal amplitude, which is the equivalence of electrical noise in the body. Secondarily, there are variations in human brains that makes accurately measuring the signals challenging. To address these concerns, deep learning models are utilized to determine which electrodes are the most useful for collecting information to classify EEG signals.

The implications of this wireless technology device are profound. The BMI headband can enable more independent living for people with mobility disabilities through the control of prosthetics, computers, and smart home technologies. [Source: TechBriefs; John Toon via Georgia Tech]

ADDITIONAL INFORMATION:

Wearable Brain-Machine Interface Could Control a Wheelchair, Vehicle, or Computer
https://www.techbriefs.com/component/content/article/tb/supplements/st/stories/insider/35315#close-olyticsmodal

UPCOMING EVENTS

Assistive Technology Industry Association (ATIA) Conference 2020

ATIA 2020 will convene January 29 through February 1, 2020, in Orlando, Florida. The ATIA Conference addresses all disabilities and all types of assistive technologies that are useful across the lifespan. Sessions and networking events apply to the education market, disability services, technologies for independent living, workplace accommodations, and research and development outcomes. The Georgia Assistive Technology Program, Tools for Life, will be hosting an AT Lab where you can learn about general and specific features of AT solutions to see if they support your, your clients', or employees', or students' needs and assist in performing specific tasks or goals.

ADDITIONAL INFORMATION:

ATIA 2020

https://www.atia.org/atia-2020/

CSUN ASSISTIVE TECHNOLOGY CONFERENCE

The 35th CSUN Assistive Technology Conference (CSUN 2020) will convene March 9 through 13, 2020, in Anaheim, California. CSUN is the largest international conference addressing topics regarding people with disabilities and assistive and accessible technologies. Conference topics typically pertain to the domains of education, employment and workplace, entertainment, independent living, law and policy, and transportation.

ADDITIONAL INFORMATION:

CSUN 2020

https://www.csun.edu/cod/conference/sessions/

TECHNOLOGY AND DISABILITY POLICY HIGHLIGHTS, FALL 2019 (October – November)

SUBSCRIBE TO NEWSLETTER

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]. 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] or Dara Bright [dara.bright@cacp.gatech.edu]. If you wish to update your email address, send an email to salimah@cacp.gatech.edu.

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