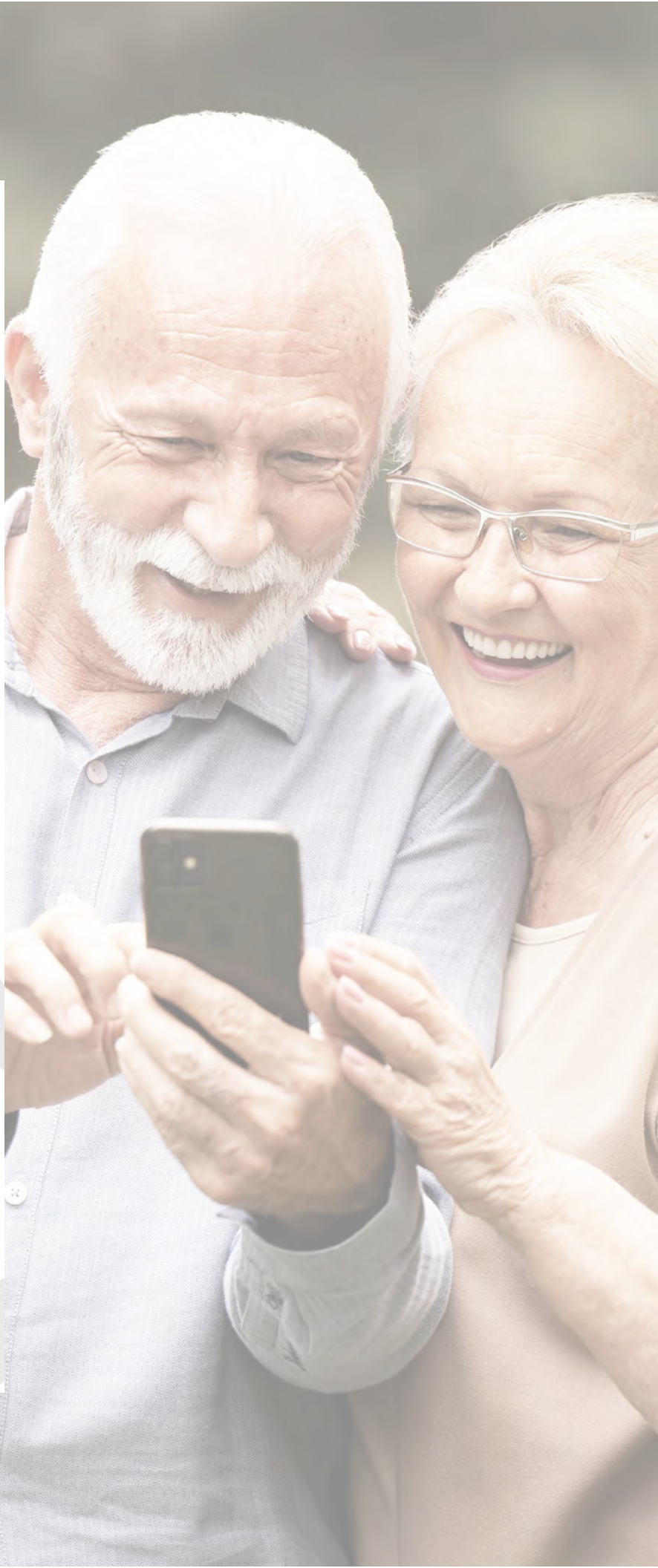
GARI GLOBAL ACCESSIBILITY REPORTING INITIATIVE

ANNUAL REPORT 2021

Helping people find devices that best suit their needs



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INTRODUCTION

In 2021, the MWF launched a research project on consumer electronics and assistive technology, inviting five researchers to investigate the question: "Can devices listed in GARI fulfil assistive technology (AT) requirements and be eligible for national AT funding? What impediments, if any, exist, and can these be overcome?" The research outcomes provide valuable input in discussions with policymakers, add to available knowledge through academic publications and lay the groundwork for national outreach campaigns in several European countries.

This GARI Annual Report summarises the research outcomes, an overview of changes made to the GARI website and database throughout the past year, and outlines milestones for GARI in 2022.

GARI'S INTERNATIONAL REACH

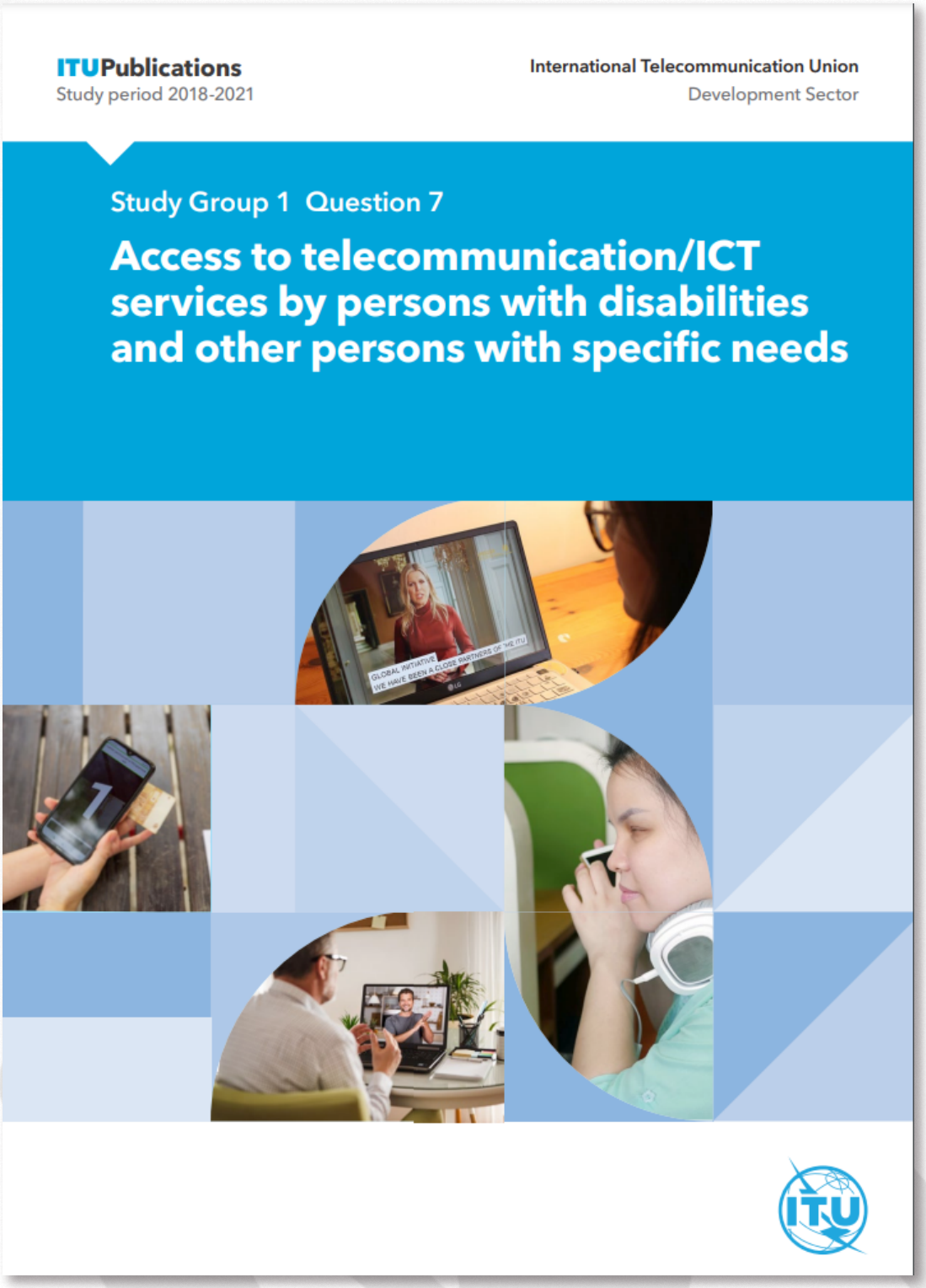
Throughout the year, the MWF used invitations to international conferences and stakeholder meetings to learn about mobile accessibility, share our experience with the GARI project, and present different ways consumers and institutional users can benefit from GARI as a resource.

One of these events that allowed us to reach over 1,600 online participants and exchange with 70+ speakers was the Accessible Europe conference, jointly organized by the International Telecommunication Union (ITU) and the European Commission (EC). On this occasion, the MWF chaired the session on "Advancing implementation of ICTs Accessibility across Europe" and had prepared a video about GARI, which was displayed during the event and is now published as part of ITU's playlist on YouTube:

Link to: Accessible Europe 2021: ICTs for All - Day 2

Furthermore, we were happy to have GARI featured in the ITU's Output Report on ITU-D Question 7/1 - Access to telecommunication/ ICT services by persons with disabilities and other persons with specific needs for the study period 2018-2021. GARI is cited in chapter 2.1 on

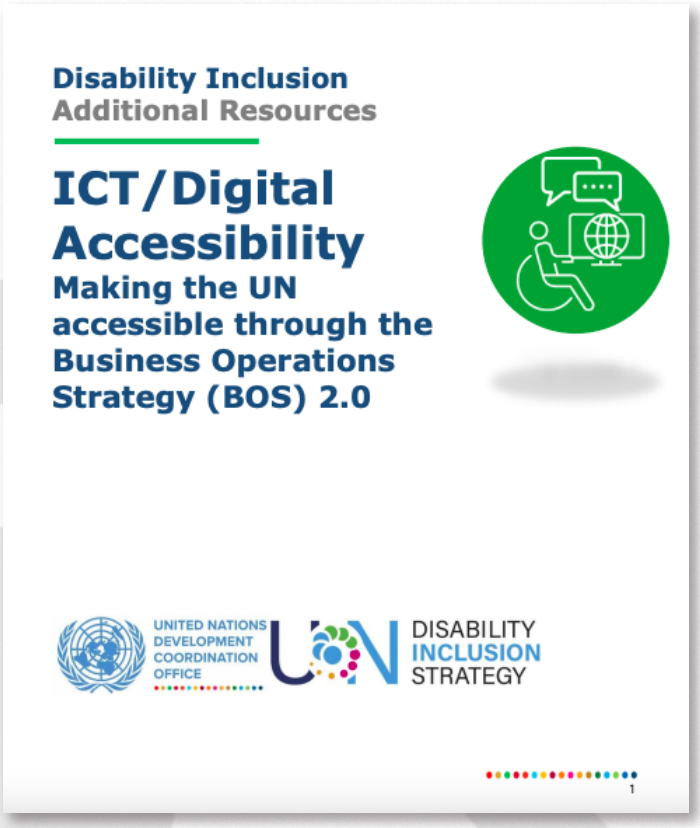
"Mobile communication accessibility policy framework" and in Annex 1 on "Overview of good practices and achievements in ICT accessibility worldwide." Click here to see link to ITU's Output Report.



Additionally, ITU-D has included the links to GARI, the GARI Annual Report 2020, and the GARI Blog in the ITU-D ICT / Digital accessibility website, which provides resources for ITU member states.

Another international document referencing GARI is the 2021 United Nations Sustainable Development Group compendium of additional resources for accessibility, FAQs, and a glossary of disability inclusion terms to implement ICT & Digital Accessibility Services for the Business Operations Strategy (BOS) within the organization.

The document includes a link to the GARI website and database.



UPDATES TO THE GARI DATABASE

Since there are different terminologies in use in different geographic regions, the display of the hearing features in the GARI database was updated so that "Hearing Aid or HAC Setting" is only displayed if the user is located in North America, and "Hearing Aid T-coil Coupling" is shown in the rest of the world.

Based on cases where users' photosensitivity was triggered by flashing graphics in the power-up of the device, the MWF listed a new feature in the GARI database:

☑	Animated Graphics	The set-up and power-up graphics of the device comply with W3C's Web Content Accessibility Guidelines 2.0 (Success Criterion 2.3.1) on preventing triggering of photo-sensitivity.

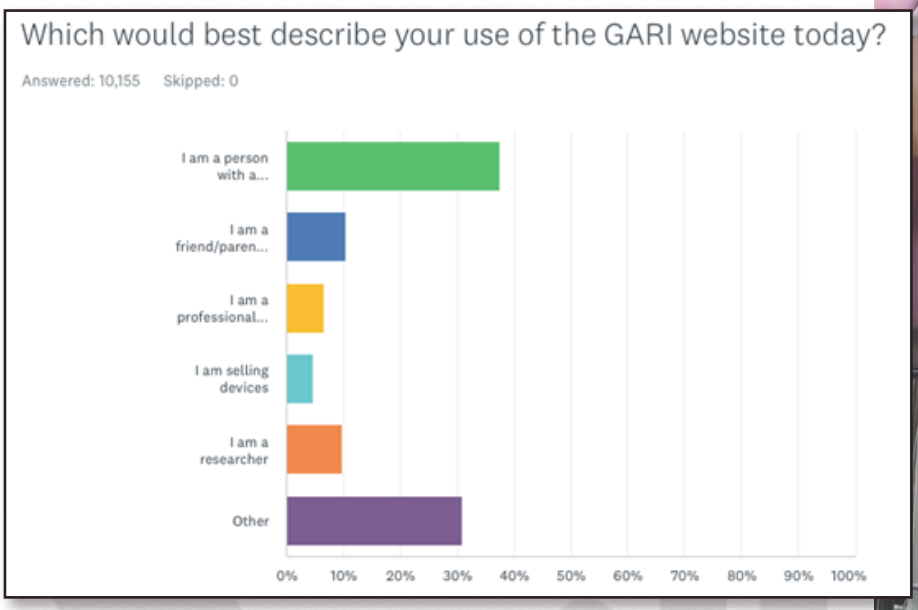
To address questions relating to the Inductive Loop feature, we rephrased the description to clarify what they are and how they can connect, as indicated below.

☑	Connection available for Induction Loop	An inductive neck loop is an assistive device that can help hearing-aid users to communicate via the mobile phone by providing amplified inductive output for t-coil hearing-aids. The neck loop can eliminate interference from the mobile phone, amplify the volume and enable users to hear and speak handsfree. Depending on the neck loop model it will be equipped with a 3.5 mm jack and/or allow for connection via Bluetooth or WiFi.

When rephrasing an existing feature or description we are careful to ensure that the answers previously provided by manufacturers remain accurate.

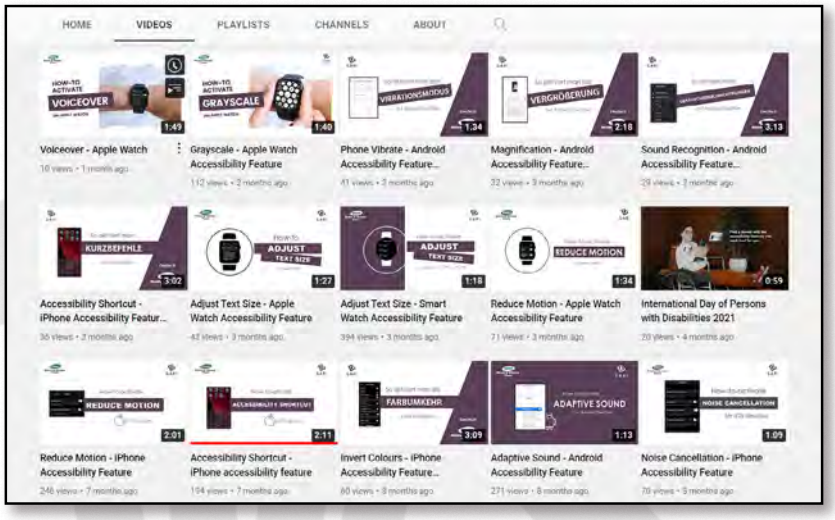
GARI USER SATISFACTION SURVEY

The GARI user satisfaction survey implemented on the GARI website in 2019 continues to provide feedback from users of the database and visitors. By the end of 2021, close to 10,000 people have responded to the survey. Out of our respondents, over 40% identify as people with disabilities. We are happy that the level of respondents confirming they found what they were looking for in GARI remains at close to 65% over the years.



Equally constant remains the wish for more information on how to use the accessibility

features in the devices. The MWF continued the series of short videos, explaining where to find accessibility features in the device and how to activate them.



The videos published to date can be found on the GARI website. You may also visit the GARI Youtube channel by clicking here.

Additionally, the MWF started publishing feature videos for connected wearables. The videos include **'Adjust Text Size'** for the Apple Watch and Smartwatch, **"VoiceOver"**, **"Grayscale"**, and **"Reduce motion".**

Information about the videos was shared with stakeholders such as the European Disability Forum and the members of ITU-D Question 7 dealing with "Access to communication and information technology services by persons with disabilities", whom all welcomed this additional resource.

ASSISTIVE TECHNOLOGY RESEARCH PROJECT

Today's mobile phones include a long list of accessibility features that can support people with disabilities in accessing electronic content, using online services and participating in our increasingly online life. However, these devices can be expensive, and people with disabilities often live in precarious economic situations, which increases the importance of funding to access technology.

For this reason, the MWF in 2021 initiated a research project to investigate whether devices listed in GARI fulfil the requirements of assistive technology (AT) and could be eligible for national assistive technology funding. A team of researchers from the Global Universal Design Commission Europe (GUDC-EU) and David Banes Access and Inclusion Services analyzed the current policy environment in six countries, studied eligibility, approval, funding, and provision of assistive technology – checking against user needs and developed initial indicators for the social return on investment (SRoI) for including mainstream consumer technology in AT provision schemes.

Their analysis of the key features that support accessibility for smartphones and tablets showed that these features focus on making the device more usable for people with disabilities and,

from this aspect, do not directly fall under the definition of assistive technology. However, a comparison with international standards revealed that 25 of the over 130 features listed in GARI

are assistive in nature and match the requirements in the standards applicable for assistive technology.

Furthermore, if the device is enhanced with a range of third-party products, including emerging technologies and innovative software, the complete package can be more clearly identified as assistive technology. Such a package is unlikely to be used by a person without a disability and therefore falls within the definition of assistive technologies.

The research further underlines the potential for AT to offer more involvement in employment for people with disabilities and increase their independence in everyday life. Mainstream AT devices supplied to people with disabilities based on their individual needs can widen the availability of support and choices based on each individual's preference. The benefits of widening the reach significantly outweigh the cost of supporting funding for mobile assistive technologies.

Overall, GARI listed devices could bridge the gap in what is provided to people with disabilities and their specific needs. The GARI list describes many devices that can be helpful to people with disabilities having in mind that these devices are equipped with built-in accessibility features which are of great use and beneficial to people with disabilities. Supporting disabled people with access to AT can significantly reduce loneliness and allow them to be more active

and participate in society.

To share the findings of this research more broadly, several submissions to peer-reviewed journals are currently under preparation.

VIEWPOINT

MWF Mobile & Wireless Forum

Can smartphones qualify for assistive technology funding?

Many smartphones today include accessibility features that can complement and for many use cases replace specialised assistive technology (AT) such as screen-readers, screen loops, speech-to-text programmes or alternative augmented communication (AAC). In some cases, an accessible mainstream device would even better fulfil the requirements of users with disabilities and/or individual access needs than specialised AT. Many students for example would prefer an accessible smartphone, tablet or computer with the necessary features for following the lectures and accessing university services at a lower price and in a more blended-in (fashionable) way than the usually provided AT. However, mainstream devices are hardly ever eligible for funding, which in most cases is limited to specifically selected equipment lists.

For this reason, the MWF in 2021 initiated a research project to investigate whether devices listed in GARI fulfil the requirements of assistive technology (AT) and could be eligible for national assistive technology funding. A team of researchers from the Global Universal Design Commission Europe (GUDC-EU), and David Banes Access and Inclusion Services analysed the current policy environment in six countries, analysed eligibility, approval, funding, and provision of assistive technology – checking against user needs, and developed initial indicators for the social return on investment (SRoI) for including mainstream consumer technology in AT provision schemes.

The analysis of the key features that support accessibility for smartphones and tablets showed that these features focus on making the device more usable for people with disabilities and from this aspect do not directly fall under the definition of assistive technology. However, a comparison with international standards (including the WHO's Priority Assistive Products Lists, the ISO 9999 standard on "Assistive products for persons with disability", the EN 301 549 on "Accessibility requirements for ICT products and services" as well as the Section 508 requirements for accessible ICT in the US, and the International Classification of Functioning, Disability and Health) revealed that 25 of the over 130 features listed in GARI are assistive in nature and match the requirements laid out in the standards applicable for AT.

The research has further shown that there is potential for AT to offer wider participation in employment for people with disabilities and increase their independence. Additionally, AT available at mainstream reach, with their lower cost thresholds than specialist equipment, can reduce the costs to the taxpayer and provide a good ratio of SRoI. Mainstream AT devices supplied to people with disabilities based on their individual needs can widen the availability of support and choices based on each individual's preference. This could be made possible by basing AT provision on purpose and outcomes rather than an increasingly blurred distinction between accessible and assistive products. It would have also the benefit of "future-proofing" provision to include new technologies such as smart speakers and wearable technologies where the help of those products is demonstrable for people with a disability.

Overall, GARI listed devices could bridge the gap in what is provided to people with disabilities and their specific needs. The GARI list describes many devices that can be helpful to people with disabilities having in mind that these devices are equipped with built-in accessibility features which are of great use and beneficial to people with disabilities. Supporting disabled people with access to AT can significantly reduce loneliness and allow them to be more active and participate in society.

Based on this research, two publications in peer-reviewed journals are under preparation.

March 2022

38 MANUFACTURERS FIVE PRODUCT GROUPS AND 1,500+ ACCESSIBLE DEVICES

Since its creation in 2008, GARI has grown to provide information on the accessibility of over 1,500 devices, including mobile phones, tablets, Smart TVs, Wearables and over 600 accessibility-related apps. The database is free to use, available online in 20+ languages and is used by governments, user organizations, telecom providers and many other stakeholders worldwide.

The GARI database is populated with new devices coming to the market. By the end of 2021, the database listed information on the following number of mobile phone models around the world:

There are currently **1,366** accessible mobile phones listed in the GARI database, in addition to accessible tablets, Wearables and Smart TVs.

The database also lists almost 600 accessibility-related apps specifically designed to help overcome barriers people face due to disability, injury, illness, old age or disabling environments. The apps include maps for accessible locations, crowd-sourced help via the device camera for people who are blind, speech to text functions for people who are deaf or hard-of-hearing, alternative and augmented communication and much more.

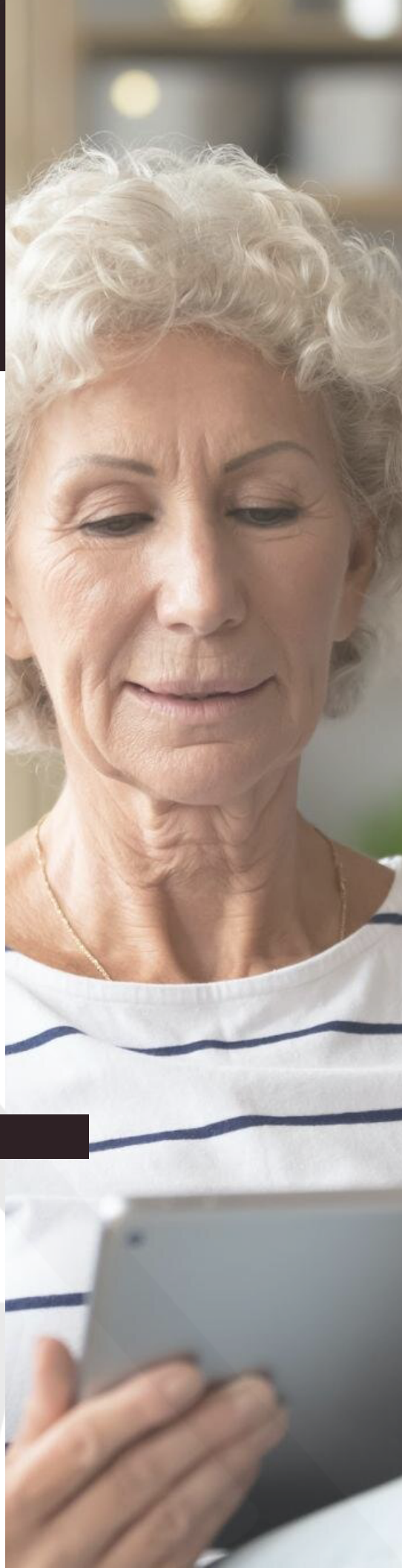
By the end of 2021, 38 manufacturers are displaying their products and the information on their accessibility features in the GARI database. These include ***Alcatel, Apple, Blackberry, Bullitt Group, Cat Phones, Cisco, Coolpad Technologies Inc, Google, Great Talent Technology Limited, HP Inc, HTC, Huawei, KonnectOne, Kyocera, LG, Land Rover Explore, Lenovo, MobiWire, Motorola Mobility, Motorola Solutions, Nokia, Oppo, OnePlus, Orbic, Positivo, Reliance communications LLC, Semp TCL, Start USA Inc, Samsung, Sonim Technologies Inc., Sony, T-Mobile USA, TCL, Telstra, Timex Group USA Inc., Wiko Mobile, Wintech Group Limited, ZTE.***

GARI constantly evolves based on feedback from the disability community, accessibility experts and the latest technological developments and builds on partnerships with organisations worldwide to expand and reach even more users.

WHERE ARE GARI USERS LOCATED?

In 2021, we saw increased use of GARI in North America, with 53% of visitors coming from the US and Canada. Europe and Asia-Pacific dropped to almost 15% each, followed by users from Latin America with 11%. The rest of the users came from the remaining regions, including Africa and the Middle East.

We see the usage of the GARI website change from year to year in correlation to regional initiatives driven by the government and the private sector when network providers, for example, decide to promote accessible devices and services for their customers.



ACCESSIBILITY INFORMATION IN 20 NATIONAL LANGUAGES

As important as it is to provide information on the accessibility features in devices, it is equally essential to provide the information in an accessible format. For this reason, the GARI website was designed to be usable with screen-readers and includes a collection of American sign language videos that explain how to use the site. In addition, the GARI site has been translated into 20 languages allowing consumers to search the database in their preferred language irrespective of where they reside.

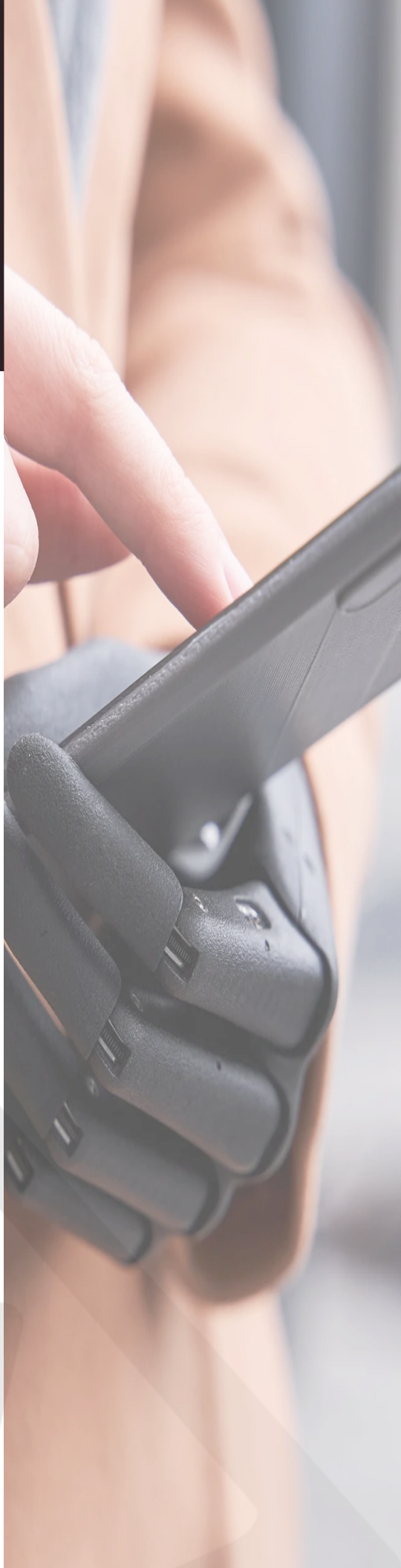
Languages currently supported on the site include English, Arabic, Danish, German, Spanish, Swedish, Finnish, French, Hungarian, Italian, Korean, Dutch, Norwegian, Polish, Portuguese, Romanian, Japanese, Chinese, Hebrew and Lithuanian.

The MWF is committed to expanding the range of languages that GARI is provided in and is happy to work with partner organisations to help bring this about.

THE TOP 9 MOST SEARCHED FOR FEATURES IN 2021

Interestingly, after years of being dominated by hearing features, the list of the most searched for features (via the 'Advanced Search' function) has completely changed in 2021:

1. Touch Screen
2. Biometric Login
3. Internet Capability
4. Supports the ability to install third-party applications or apps
5. Battery Saver or Adaptive Battery Settings
6. Headset/Headphone - connector
7. FM Radio
8. Dedicated and distinguishable key to lock the screen
9. Alternative to Biometrics



For comparison, here is the list of the top 9 searched for features in 2020, with 6 out of 9 features relating to hearing:

1. Hearing Aid T-coil Coupling
2. Hearing Aid or "HAC" Setting
3. Internet Capability
4. Improved Call Quality
5. Adjustable Maximum Volume Control
6. Supports the ability to install third-party applications or apps
7. Connection available for Induction Loop
8. Ringer Volume Adjustable
9. Touch Screen

It will be interesting to see how this list develops in 2022.

STRONG PARTNERSHIPS

The MWF makes the GARI dataset available for organizations wishing to feature GARI within their sites. The dataset is available as an XML file that is updated daily. The dataset is licensed under Creative Commons License[1] and is open to governments free of charge.

The "Examples of GARI in use" page on gari.info gives an overview of around 40 organizations, network providers, regulators and government agencies linking to GARI[2].

International network providers and industry bodies in 10 countries are using GARI to train their staff to search for appropriate devices to meet consumer needs or provide information on mobile accessibility to their clients and constituencies. Several more network providers use GARI to select accessible devices for their product portfolio.

GARI also partners with the disability community, governments and regulatory authorities, app developers, ITU, G3ict, health platforms, occupational therapists, industry, network providers, consumer organizations, universities, and AT platforms.

[1]See this link for more information and the terms of the Creative Commons License.
[2] Link to government agencies linking to GARI.

BEYOND GARI

The MWF provides member companies and members of the Accessibility Working Group with an overview of accessibility topics reported across all media platforms worldwide and ongoing regulatory developments in mobile and ICT accessibility. In 2021, the MWF remained active in discussions around the implementation of the European Accessibility Act and the adoption of the new Hearing-Aid Compatibility standard in the US, strengthened our relationships with national and international disability organizations and participated in online conferences and gatherings of accessibility experts to promote GARI, joining the discussions around technological, regulatory and societal developments in ICT accessibility.

The GARI Twitter account @GARIupdates remained an excellent channel for interacting with key stakeholders and influencers in the mobile accessibility field. GARI and accessibility-related updates were also shared via the MWF's LinkedIn page.

THE YEAR AHEAD

In 2022, the MWF will organize the next GARI feature review. From the beginning, the MWF committed to regular reviews of the features that we report on in light of changes in the technology and customer needs. For the 5th review undertaken in 2019, invitations went out to over 80 organizations and experts and suggestions were received from a variety of organizations coming from the US, Brazil, Australia, Europe (European-wide organizations), France, UK, Switzerland, Germany, Austria, Sweden, Norway – 11 countries on four continents. We expect the 2022 review to involve as many if not more stakeholders.

The second line of activities will revolve around the outcomes of the GARI research project on assistive technology, with outreach campaigns on a national level in several European countries and the finalization of submissions to peer-reviewed academic journals. Building on GARI's strong representation of accessible devices, we will adapt and promote the

database and website in the context of the European Accessibility Act and offer this resource to better inform consumers about the many available accessibility solutions in the market.

Our aim throughout the year will be to constantly improve the information provided and reach many more consumers and users who are looking for accessible mobile phones, tablets, Wearables, Smart TVs and accessibility-related apps.

GET IN TOUCH

We would welcome the opportunity to discuss how we could further promote awareness of the accessibility features in devices or about the GARI project itself. Our contact details are as follows:

Mobile & Wireless Forum

Email: accessibility@mwfai.org

Web: www.mwfai.org & www.gari.info

Twitter: @GARIupdates

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