

ACCESSIBILITECH

Advanced Methodologies to Identify, Assess and Transfer
Innovative Solutions for the Accessibility of People with Disabilities

D4.2. Document on policy recommendations to promote accessibility in the EU

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Purpose of this document

The aim of this document is to provide recommendations for policy development and extended use of inclusive and accessible technologies. The recommendations are based on the results and knowledge gathered during the ACCESSIBILITECH project, namely through the development of the Active Listening Tool and Mapping of Accessible Technologies (Work Package 2), the implementation of the Knowledge Hub activities (Work Package 3) and the Final Conference (Work Package 4).

We aim to showcase how the lessons learnt from the ACCESSIBILITECH project outcomes can be leveraged at European policy level and with a series of recommendations for key stakeholders:

1. Policy makers in accessibility and related fields (at both European and national level);
2. Accessible technology developers;
3. Social service providers;
4. Persons with disabilities, DPOs and organisations representing persons with disabilities

These recommendations seek to provide insights that can be useful for these stakeholders, and include recommendations regarding:

1. Existing policy initiatives, such as the Web Accessibility Directive (WAD), European Accessibility Act (EAA) and the European Accessibility Resource Centre (AccessibleEU).
2. Funding: programmes can boost inclusive and accessible technologies (Digital Europe, Horizon Europe, ERDF, ESF+) and how this can be tackled in practice.
3. Existing European accessibility standards, specifically the EN 301 549 Accessibility requirements for ICT products and services.

In addition, the annexes included are the basis of the recommendations provided, with the intention of raising awareness among stakeholders on the following issues:

- ▶ Annex 1 – Includes learnings from the active listening tool and showcases 10 solutions available in Europe and beyond to address accessibility barriers in e-learning, teleworking and telecare that are particularly effective and describes the reasons behind their effectiveness and the learnings.
- ▶ Annex 2 - Highlights the capacity of existing EU funding programmes to contribute to addressing and reducing accessibility barriers for persons with disabilities.
- ▶ Annex 3 - Shares learnings and experience on how to build a Knowledge Hub and what type of activities are more effective with the aim of contributing to the AccessibleEU Centre.

Learnings and recommendations from ACCESSIBLITECH

Considering the experience and data collected in accordance with the objectives and activities developed throughout the project, a series of courses of actions are presented below for the stakeholders' considerations.

Policy makers

These recommendations are aimed at policy makers involved in the formulation of policies and programming of funds in the field of accessibility and related fields, at national and EU level:

Generally:

- Including accessibility concepts in lifelong learning frameworks, and digital skills initiatives (Pact for Skills, Blueprint sector skills initiatives, ESCO and CEDEFOP information products, etc.).
- Providing assistance and funding to accessibility experts to review mainstream technological products such as mobile phones, tablets or TVs and obtaining recommendation for developers to improve the accessibility of their products so that they are able to meet the requirements of the EAA and the EN 301 549 standard.
- Facilitating the dissemination of accessibility related projects results through different official sources as Ideal-ist, Fit for Health 2.0, and the European Year of Skills, among others to encourage potential applicants to in EU Framework Programmes to implement accessibility in their proposals or submit accessibility-related projects.
- Creating positive synergies and leading broad stakeholder dialogue and cooperation to develop optimal and timely inclusive and accessible technology solutions that respond to the needs of persons with disabilities.
- Ensuring easy access to ongoing funding opportunities for disability service providers to improve service delivery and adapt to digital targets for resilience and modernisation.
- Launching raising awareness campaigns targeted to the technological sector, so that professionals such as programmers, designers and service providers learn about accessibility and how to apply requirements of the European Web Accessibility Directive, the EN 301 549 standard, and other regulations.

Regarding the continuity of the project experimentation:

- Use by the AccessibleEU of results obtained in the ACCESSIBLITECH project as a base from which to continue building. Specifically:
 - Use of the mapping tool as a reference point and search tool for good practices on accessible solutions.

- Use of the ACCESSIBILTECH CHART to follow the approach, experience and learnings obtained in the construction of the active listening and mapping tool will serve as the basis for the construction of future possible tools.
- Use of the mapping of key actors through the knowledge hub and solutions from the mapping tool to establish a powerful network.
- Ensuring the continuity and sustainability of the Active Listening Tool by designing a second stage for the analysis of solutions taking in consideration other parameters. For example, evaluating products or services following the standard EN 301 549.
- Promoting the inclusion of projects with verified accessibility features in official repositories and databases.

Funding programmes:

Accessibility should be considered as an important issue for all European programmes, and especially Digital Europe, Horizon Europe, ERDF, ESF. Therefore, it is suggested:

- Including accessibility as a requirement in European funding programmes calls.
- Avoiding the biases that occur in the algorithms that exclude groups of persons with disabilities in EU funding AI based projects.
- Ensuring that funded projects consider the special needs of people with disabilities. Specially those where developments are related with telework, elearning and telecare, as well as common daily tasks such as online shopping e-banking, etc

Technological developers

These recommendations are aimed at the technological sector, especially developers, who are involved developing technological products and services:

- Developing technical solutions following based accessibility standards so that the product or service can be easily used by the vast majority of the public, including persons with disabilities and older adults.
- Including people with disabilities in the design and development process of a product from the earliest stages.
- Meeting the requirements of the standard EN 301 549, and specifically:
 - Ensuring compatibility and interoperability of devices and applications with assistive technologies.
 - Ensuring the availability of captioning, sign language interpretation and audio-description in audio visual platforms and video conferencing tools.
 - Making customer services accessible particularly for people with hearing, cognitive and speech disabilities.
 - Providing information about the accessibility features in their products and apply accessibility requirements to consumer documentation such as installation instructions and user manuals,

and support services among others according the EN 301 549 standard.

- Development of more products for persons with hearing, physical or motor disabilities, as the Active Listening Tool found less solutions for these groups than others.

Service Providers

These recommendations are aimed at service providers developing and offering services:

- Engaging and actively participating in social services networks for peer-learning and exchanging of promising practices on accessibility for persons with disabilities.
- Accelerating the upskill and reskill of service providers workforce in the digital domain by providing lifelong learning opportunities about inclusive and accessible technology.
- Providing more interactive and easy-to-read guides and manuals that show in detail how to use the accessibility features included in the services.
- Ensuring that digital communication and virtual platforms such as video conferencing or e-Learning applications used by service providers offer accessible solutions such as braille, easy-to-read texts, audio and colour options.
- Integrating in-person, inclusive and accessible digital solutions for service provision where feasible and desired by the user to achieving optimal coverage of the individual needs of service users.
- Periodically monitoring, re-evaluating and adapting service provision practices involving the use of digital technology, based on technical considerations and feedback from service users.
- Development of more services for persons with hearing, physical or motor disabilities, as the Active Listening Tool found less solutions for these groups than others.

Persons with disabilities

These recommendations are aimed at persons with disabilities as the users of technological accessibility products and services:

- Report any malfunctioning or issue with the accessibility features included in a product or service and encourage other persons with disabilities to do the same.
- Following lessons and courses to improve their digital skills and break the digital divide.
- Keeping informed about the accessible technological solutions available and how they can make your daily life easier.

- Seeking opportunities for interaction with accessible digital devices and platforms with support from family members, friends and service providers.
- Participating in accessibility evaluation processes of devices (such as smartphones, computers and tablets) and mainstream applications.

Organisations representing persons with disabilities

These recommendations are aimed at organisations representing persons with disabilities as the users of technological accessibility products and services:

- Strengthening the cooperation and agreeing on common strategies to advocate for the rights of persons with disabilities, particularly, their right to access and enjoy inclusive and accessible technological solutions.
- Providing assistance and guidance supporting the development of inclusive and accessible technology by providing support to technological companies.
- Engaging in testing processes of digital devices and platforms to assess the capacity of the tool to respond to their needs
- Advocate for funding for accessibility reviews of mainstream products such as mobile phones, tablets or TVs, in collaboration with developers.
- Actively encouraging technological companies to design more accessible devices, tools, platforms and applications and encouraging service providers to include them in their practices when suitable.

Annex 1 - Technological solutions to address barriers in eLearning, telework and telecare

Brief overview of the Active Listening Tool

The ACCESSIBILITECH project has developed an “Active Listening Tool” (Deliverable 2.1), that includes a semi-automatic algorithm that identifies accessibility solutions (products, services and projects) in the areas of telework, e-learning and telecare in Europe and beyond. The search engine combines automatic search through machine learning and manual search support based on:

- An upgraded method of identification of inclusive and accessible technologies and solutions validated with approximately 100 solutions.
- A method of identification of EU-wide inclusive and accessible technologies and solutions tested with 30 solutions and used to select three potential initiatives for beta testing. The test consists of the assessment of the level of replicability, scalability and transferability of the solutions. The disabilities covered and accessibility features were also decisive criteria factors.

Solutions found were analysed by the team in charge of reviewing solutions and added to the [Online Mapping tool in the project website](#) (Deliverable 2.3).

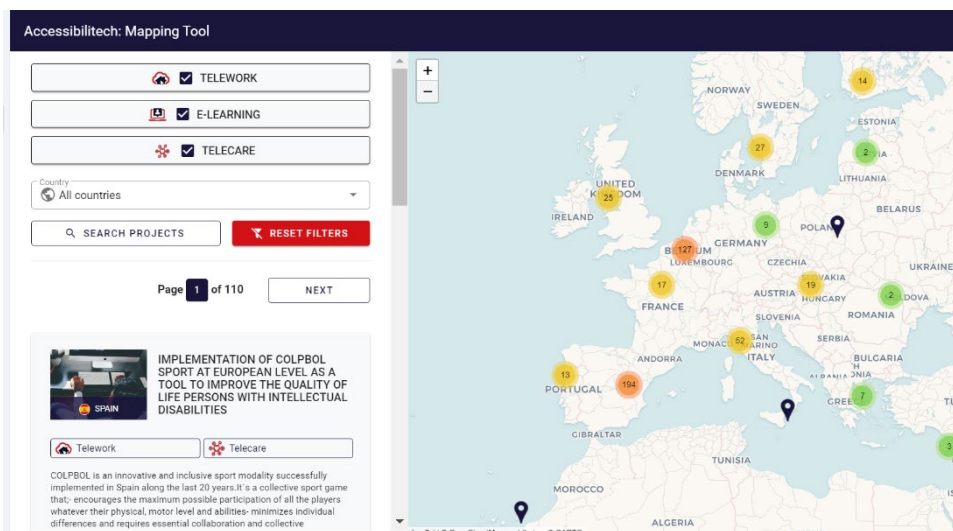


Image 1 View of the Mapping Tool

Detailed information on the development of the Active Listening Tool and the results and learnings are available in the report “Active listening tool and on-line mapping tool on inclusive & accessible technologies final assessment of results and functioning”, which is published on the project [website](#) as part of the ACCESSIBILITECH CHART.

General recommendations based on results and learnings from the Active Listening Tool and beta testing of solutions (Deliverable 2.3)

- There is no homogeneity in the data related to accessibility provided by developers of accessible solutions. Therefore, standardization and technical recommendations are needed to guide developers and service providers so that end users can get clear information about how the products and services can benefit them.
- When looking for accessibility related projects, it is necessary to provide alternatives ways to search engines to gather solutions that are not well labelled in the webpages or simply are not published on the internet. Introducing a manual feed, complemented by dissemination to developers and service providers, is a good solution to complement the algorithm.
- From what has been seen to date, the developers or persons marketing the of the solutions publish little information on accessibility for the most part and do not provide details on the accessibility measures implemented, on compliance with accessibility standards, nor on usability of their products by persons with disabilities from a design-for-all approach.
- The Active Listening Tool has found more products and services for visual or cognitive disabilities than for persons with hearing, physical or motor disabilities, therefore we recommend the promotion of more of the latter solutions by developers and service providers.
- Ensuring that digital communication and virtual platforms such as video conferencing or e-Learning applications used by service providers offer accessible solutions such as braille, easy-to-read texts, audio and colour options.

Selection of solutions for further analysis

The solutions identified and analysed as a part of the project can help stakeholders comply with accessibility standards and improve the experience of persons with disabilities in e-learning, telework and telecare.

Solution name	Accessjobs
Brief description of solution	Accessjobs tries to break barriers that any person can find in videoconference tools by creating from scratch a web video conferencing platform, and incorporating end users, as well as accessibility and usability experts, from the design phase, in order to include their requirements and guidelines.
The barrier it solves	There are many video conferencing platforms, which have resolved many situations caused by the pandemic. The question is to what extent is inclusive design correctly integrated into these well-known platforms. On many occasions the interface is not intuitive, the accessibility measures are displayed for all attendees or they do not have sufficient quality or robustness to provide a good service in terms of accessibility.

	<p>Many of these platforms include subtitles, without being able to configure the characteristics of the text, it does not include sign language space or such basic aspects as identifying the speaker. All these issues are resolved at Accessjobs, since a design focused on the user experience has been promoted, they have managed to innovate and propose accessibility aspects never seen before in a videoconference platform. They can be considered precursors of one, if not the most accessible video conferencing platform of the moment.</p>
<p>What specific technology is used and how it addresses the accessibility barrier</p>	<p>The main core of accessjobs is based on Jitsi although the system has additional components, Jitsi is a collection of free and open-source multiplatform voice (VoIP), video conferencing and instant messaging applications for the web platform, Windows, Linux, macOS, iOS and Android. The Jitsi project began with the Jitsi Desktop (previously known as SIP Communicator). With the growth of WebRTC, the project team focus shifted to the Jitsi Videobridge for allowing web-based multi-party video calling. Later the team added Jitsi Meet, a full video conferencing application that includes web, Android, and iOS clients. Jitsi also operates meet.jit.si, a version of Jitsi Meet hosted by Jitsi for free community use. Other projects include: Jigasi, lib-jitsi-meet, Jidesha, and Jitsi. At Accessjobs these technologies are used in a self-hosted way, to guarantee the greatest possible independence and security.</p> <p>Being open-source, this has allowed us to touch the code and customize the user experience under different disability scenarios. Likewise, thanks to the continuous user tests, this has helped the team to test the accessibility measures and discover the best way to approach them. Customization has been the basis and the good choice of the core has allowed it within the project. Accessibility was a vital point and the development team has known how to listen, polish and perfect, for a good experience for users with disabilities under a design for everyone.</p>
<p>Learnings and recommendations</p>	<p>The development of this project and being able to get to know it under the umbrella of the Accessibilitech mapping tool, has allowed us to discover an optimal solution in terms of accessibility, with a methodology based on design for everyone, such as recommendations or questions, how will Accessjobs reach the general public with and without disabilities? What are the options of this accessible platform in a world with large platforms in the market? Although they</p>

are not as accessible, they are supported by large global corporations.

Solution name	Tleo
Brief description of solution	<p>A simultaneous transcription app to help with communication for the hearing-impaired. Designed to be implemented in work and educational settings. The app's features include: Create a class or event for others to attend and follow the talk in real time. These classes or events can be saved for later reference. Request a code and log in to the class or event in order to follow it in real time. Technical assistance for the deaf community: simultaneous transcription app to help with communication for the hearing-impaired. Tleo has been carried out by the idei Research Group (Innovation and Inclusive Educational Development) of the University of Malaga and the company Novafortel.</p>
The barrier it solves	<p>When a meeting or class has multiple people speaking, this leaves hearing impaired people out of equal opportunity to participate in conversations. For this reason, the Tleo mobile application has been designed to eliminate the communication barriers that people with hearing problems encounter on a daily basis and allows the inclusion of non-hearing people in any social, work or educational situation thanks to its simultaneous transcription tool in alive. It also serves as a pedagogical instrument to make education and knowledge accessible to all.</p>
What specific technology is used and how it addresses the accessibility barrier	<p>The technology used to perform simultaneous transcription has allowed the development of the following features to promote accessibility:</p> <ul style="list-style-type: none"> • SIMULTANEOUS TRANSLATION: Pass speech to text and text to speech in real time • SCAN QR: Scan a QR code and you can enter any conversation without having to download the app • ENTER CLASS OR EVENT: Request the class or event code and follow the talk live. You will be able to participate if the host grants you permission • SETTINGS: Change your username, font size, etc. <p>With Tleo you can follow any talk, class, conference, itinerary, etc. in real time from your mobile, tablet or computer</p>
Learnings and recommendations	<p>We have discovered with Tleo that on many occasions, the solutions focus on covering a very specific need but on many occasions, they do not take into account a minimum of accessibility for other profiles. It would be</p>

interesting if **all solutions were accessible with a minimum level beyond focusing on covering a specific need.**

Solution name	Dwell Clicker 2
Brief description of solution	<p>Dwell Clicker 2 is a Windows application that allows you to use a mouse or other pointing device without clicking buttons. It is ideal for people with RSI and people who use alternative pointing devices such as a head pointer or joystick.</p> <p>Dwell Clicker features Dwell Clicking Dwell Clicker allows you to use you mouse, or any other pointing device without clicking. Visual dwell display (Pro only) During a dwell, the progress is shown with a circular progress bar Target snapping (Pro only) Dwell Clicker will automatically snap the mouse cursor to object that can be clicked on. Click lock (Pro only) Let's you do the same click repeatedly, for multiple similar actions in a row Requirements Dwell Clicker is a lightweight Windows program and works on Windows 7, 8 and 10.</p>
The barrier it solves	<p>Elderly people or those with physical or motor disabilities have numerous problems using the different devices, in this case, mice, or interacting with technology through keystrokes known as clicks or performing several keystrokes.</p> <p>The goal or barrier to be resolved is to facilitate this interaction of person machine through the mix between software and hardware.</p>
What specific technology is used and how it addresses the accessibility barrier	<p>In this case, the technology relies more on innovation from the hardware side. This solution includes the following features with the aim of granting accessibility to people with mobility problems:</p> <ul style="list-style-type: none"> • Dwell Clicker allows you to use you mouse, or any other pointing device without clicking. • During a dwell, the progress is shown with a circular progress bar • Dwell Clicker will automatically snap the mouse cursor to object that can be clicked on. • Let's you do the same click repeatedly, for multiple similar actions in a row • Include different setting like Target Size, Dwell Time, Sound or Position.
Learnings and recommendations	<p>This solution shows how on many occasions it is really necessary to take into account not only the software but also the hardware or what is called human-machine access. In this particular solution, it would be recommended to find out what Dwell Clicker</p>

2's involvement is with everything related to 3D printing and being able to manufacture your own hardware or mouse ad-hoc.

Solution name	Microsoft Teams
Brief description of solution	Microsoft Teams is the ultimate messaging app for your organization—a workspace for real-time collaboration and communication, meetings, file and app sharing, and even the occasional emoji! All in one place, all in the open, all accessible to everyone. Unified communication and collaboration platform that combines ongoing chat at the workplace, video meetings, file storage (including file collaboration) and application integration.
The barrier it solves	<p>The rise of teleworking due to the pandemic, the main global companies quickly got to work with the aim of achieving a virtual environment where they could promote a study classroom or office environment. The question to be dealt with was where were the students and workers with disabilities in all of this. Large and small companies have worked to offer these environments in the most comfortable, intuitive and accessible way possible.</p> <p>For this reason, from February 2020 to the present, Microsoft has worked to improve accessibility conditions and indicators for all people, including persons with disabilities, from visual to cognitive. Working on a universal design.</p>
What specific technology is used and how it addresses the accessibility barrier	<p>Microsoft is a company that has been promoting accessibility for a long time, in this case they have launched a multi-channel platform (mobile app, web and desktop) for videoconferencing, this time accessibility is promoted by the company in different ways:</p> <ul style="list-style-type: none"> • Work more efficiently with keyboard shortcuts • Use captions and transcriptions • Use Microsoft Teams with a screen reader • Control Microsoft Teams with your voice • Customize your view • Accessibility tips for inclusive Microsoft Teams meetings and live events • Zoom in and out of Teams • Turn on high contrast mode in Change settings in Teams
Learnings and recommendations	Despite the number of accessibilities measures it offers, different users with visual problems tell us that the high contrast modes, the interaction with the magnifying glass or the navigation with a screen reader

are not entirely usable, it is important to **work on usability and not only accessibility, as well as offering advanced support or tutorials.**

Solution name	ClaroRead
Brief description of solution	Software developed for people with reading disabilities, such as dyslexia. It scans documents in formats such as PDFs or images (jpeg, png) to create an accessible version by generating Word, accessible PDF or unformatted text files. Its settings and use are user-friendly.
The barrier it solves	Through the course of Accessibilitech project and realisation of tasks it was observed that not many solutions for the areas of e-learning, telework and telecare designed for people with intellectual or cognitive disabilities are available. It is important to encourage developers to consider cognitive accessibility when designing their products and to make them aware that people with training and employment possibilities have a right to have their environments, products and services adapted to foster their learning and autonomy.
What specific technology is used and how it addresses the accessibility barrier	<p>This software is available for Windows, macOS, Google Chrome and Microsoft Edge. Students can use ClaroRead on their Chromebook, laptop or MacBook. The main features are:</p> <ul style="list-style-type: none"> • Text-to-Speech: Read what is typed including individual words, passages, or whole documents aloud with easy-to-follow dual colour highlighting. • Spellchecker: Speaking spellcheck lets you select the word you want by hearing the alternatives. • Listening later: Read text into an audio or video file to listen to later. • Scanning (OCR): Convert printed documents and image files into PDF, Word and many other formats for reading and annotation later. • Dictation: When paired with Dragon Professional. (not included) • Dictionary: Speaking dictionary for any word in any program with over 300,000 English definitions. • Screen capture: Make any text displayed on the screen read aloud <p>As can be seen in the main characteristics, there are several of them that grant accessibility to people with different types of disabilities.</p>

<p>Learnings and recommendations</p>	<p>When you create software for people with intellectual or cognitive disabilities, there are many points that can be common to all and others that are very different. It is recommended to promote courses or videos that help persons with intellectual or cognitive disabilities use the technology that is made available to them.</p>
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<p>Solution name</p>	<p>Viadesk</p>
<p>Brief description of solution</p>	<p>Viadesk is included in the Dutch Digital Accessibility Index (DDAI) This is a “social intranet” that connects people, information and processes. The Viadesk application for mobile phones is available for iPad, iPhone and Android. Viadesk has a simple design and is extremely adaptable. The software’s strong points lie principally in the areas of collaboration, social networks and wiki.</p>
<p>The barrier it solves</p>	<p>Application repositories for e-learning and telework products are often not accessible or do not report the accessibility measures of the products inside. On that occasion, the solution does offer an accessible view or facilitate this for persons with disabilities in some way.</p>
<p>What specific technology is used and how it addresses the accessibility barrier</p>	<p>Everything related to this solution on issues of technology and accessibility has to do with everything related to the web and the standards or normalization linked to the web. Although they try to promote accessibility, the administrators of the solution themselves indicate:</p> <p>Accessibility is only guaranteed for normal users. Group Administrators and Webmasters (people with administrator rights) may encounter certain pages and settings that are not 100% compliant with WCAG2.1 guidelines, e.g., drag & drop features. Some of the accessibility criteria that Viadesk satisfies with respect to WCAG 2.1 are:</p> <ul style="list-style-type: none"> • TODO module/features do not yet meet WCAG21 and should be disabled. • It is recommended to provide a range of colors in the Setup for CKeditor, which meet contrast guidelines • When using icons, e.g., Shortcuts, make sure they have sufficient contrast. • Be careful on multilingual platforms; appropriate languages should be specified for screen readers • Avoid as much as possible the use of decorative images, busy wallpapers, non-standard fonts, centred text etc.

	<ul style="list-style-type: none"> • Be careful with corporate identity and custom CSS that do not interfere with Viadesk accessibility mode.
<p>Learnings and recommendations</p>	<p>In some cases, the entities are aware of not applying the accessibility criteria in their entirety, in this case with the WCAG2.1, it is important to promote accessibility criteria correctly. And it is recommended to offer different training to employees or important team positions to ensure accessibility and usability more in a platform focused on promoting the use of other technological products. It has not been found that the platform reports the accessibility of the software that it includes or promotes.</p>

<p>Solution name</p>	<p>Visualfy Places</p>
<p>Brief description of solution</p>	<p>Visualfy Places is a system that, through some devices that we install in the building, is capable of recognizing relevant sounds from the environment -such as a fire alarm, a whistle from the health shift or a citizen attention office, door closing notifies or personalized notifications- and translate them into visual and sensory alerts on any device, both common to the space -intelligent lighting that we install in the building- and personal -mobile, smartwatch or smartband.</p>
<p>The barrier it solves</p>	<p>Many times, we focus on promoting accessibility that is related to technology, that is, software or hardware, but it is also important to be able to include solutions in physical media, that is, buildings or structures. This is the barrier that Visualfy Places solves, where it shows signs that warn people with hearing disabilities of different issues, which allows them in some way to be attentive and up-to-date with their needs or external factors that may change.</p>
<p>What specific technology is used and how it addresses the accessibility barrier</p>	<p>In this case, it is a mixture of hardware and software focus in security alerts and accessible warnings, but the main measures that the solution has in terms of accessibility are:</p> <ul style="list-style-type: none"> • Fire alarm • Telephone • Intercom • Gas alarm • Acoustic pollution • Other accessible notifications <p>To improve de user experience and the simultaneous communication:</p> <ul style="list-style-type: none"> • Welcome materials • Communication material in an accesible way • Call center in sign language (LSE)

	<ul style="list-style-type: none"> • Magnetic Loop <p>The spaces adapted by Visualfy have a V-shaped signage system, so that you can receive alerts at all times, even if your mobile phone is not nearby or there is a power cut. If you prefer, you can receive them on your mobile or on any wearable from the Visualfy app.</p>
Learnings and recommendations	<p>The learning referred to Visualfy places is more focused on how they have managed to find a marketing or implementation plan to include their solution in society, collaborating with different companies that value their product and make it known.</p>

Solution name	Qvadis One
Brief description of solution	Qvadis® One is a new concept of smart intercom. It has been designed with universal accessibility in mind. It allows Users to attend rings and open the door using accessible Apps on any mobile device, tablet or computer. It is a very valuable tool for Telecare: key management, communications & more.
The barrier it solves	The intercoms usually give many problems to persons with disabilities due to different circumstances, first the installation involves a work at home that bothers or creates discomfort, as well as that it is usually placed in high places that people cannot reach, if it is an intelligent intercom many times it does not meet the accessibility criteria that technology demands and if it is a manual intercom, the shape does not usually provide good autonomy for people. In this case, QVADIS resolves these issues.
What specific technology is used and how it addresses the accessibility barrier	<p>Qvadis One is the only accessible and compatible telephone with those of a lifetime. It is a device that allows the interior telephone of the house to be replaced without making any changes to the building or to the street console, and therefore does not require the agreement of the neighbours.</p> <p>The system is very simple: when someone presses the button of our house on the intercom on the street, on our mobile, tablet or PC, a call sounds or vibrates. Just by answering, you talk to the person who is in the portal, as if you had picked up the phone, and a function of the application allows you to open the door of the building. The Qvadis application is compatible with existing disability assistance systems: it adapts to integrate with each specific case.</p> <ul style="list-style-type: none"> • users can control access to their home or business

	<ul style="list-style-type: none"> send invitations to family or friends so they can open themselves.
Learnings and recommendations	<p>In the Accessibilitech telecare category it has been possible to learn that these conditions improve, granting accessibility to devices that we use every day, such as a telephone, sometimes the best comes from achieving digitization for already existing products, it is recommended to continue improving the functionalities.</p>

Solution name	Tucuvi
Brief description of solution	Artificial intelligence to monitor patients from their homes
The barrier it solves	<p>Currently many elderly or disabled people try to promote their personal autonomy and independence but they feel lonely, with nothing to turn to due to the high demand found in hospitals, outpatient or care centres, that is why this solution proposes to have a care based on artificial intelligence, offering a solution to people with loneliness problems or even disabled people who have mobility problems and cannot move due to a situation of dependence.</p> <p>Tucuvi defines itself as Augmenting the capacity of healthcare professionals while providing high value care for patients.</p>
What specific technology is used and how it addresses the accessibility barrier	<p>Tucuvi uses automatic speech recognition and natural language processing to provide continuous care to people through personalised phone calls.</p> <p>The company works to provide a complete picture of what the family member of the elderly person needs to know, as well as the care professional, to ensure that the elderly person can live a healthy life in their own home.</p> <p>The platform focuses on continuous monitoring to detect in time small details that may put the user at risk, thus avoiding a serious situation.</p> <p>In terms of accessibility, it mostly promotes voice interaction, which helps many disabled people with mobility problems, but leaves out a lot of additional use cases.</p>
Learnings and recommendations	<p>Although it is a solution that could be a great example for persons with disabilities and take care of them in different use cases, they have focused on providing an innovative solution to a problem but have not finished adapting with accessibility, all the different casuistries that their target group may suffer from.</p>

The elderly suffers from all kinds of problems, visual, auditory, physical and motor or intellectual, and apart from innovating with artificial intelligence, it is advisable **not to forget the needs of the group and alleviate it with accessibility and usability.**

Solution name	Pauto
Brief description of solution	Pauto is a geolocated cane that has an emergency button, safe zone exit alert, activity report and laser tracks to overcome episodes of freezing when walking. It is a tool that facilitates the autonomy of the user and the tranquillity of the caregivers.
The barrier it solves	Elderly people and persons with disabilities who can walk but need support are very unprotected in the street, without a safety zone or anything to warn them in difficult situations. This cane with geolocation and various additional functionalities allows them to overcome this barrier they had until now.
What specific technology is used and how it addresses the accessibility barrier	<p>The cane in this case has a bluetooth remote technology (not confirmed) to be able to transmit the information obtained from the different indicators, especially it helps elderly people and persons with disabilities. It can help users to identify issues such as:</p> <ul style="list-style-type: none"> • emergency button and Safety area: your caregiver will receive an emergency warn when the user presses the button for 7 seconds or if the user exceeds the safety area; this warning includes the position. • Geolocation: In the versions pauto connect and pauto premium, you'll always be located outdoors. your caregivers will always know where you are. • symptoms and activity report: All the info is recorded on a safe cloud that treats and summarize it in a report. <p>Other key features include:</p> <ul style="list-style-type: none"> • symptoms and activity tracking and recording help to control the progression of the disease. • Visual and haptic cues to cope with Freezing of Gait episodes. • pauto® provides geolocation of the user, as long as its battery, GPS signal and service are available.
Learnings and recommendations	Some companies study their product so much that they make different versions to better suit different users, although in software products it is better to focus on a single version that adapts according to the needs, in the case of tangible products it is possible that studying the types of customers or users that will use your

product and generating several versions can be an option. It is recommended to better **inform about the options for each option**. It is important to **give detailed and meaningful information to the target audience**.

In conclusion, the following good practice recommendations for developers of technological accessibility solutions can be drawn:

- Use design for all methodologies when designing the solutions.
- Work on the usability of the solutions as well as the accessibility and provide sufficient support or tutorials on use. Ensure these support materials are accessible to all, including persons with intellectual or cognitive disabilities.
- Ensure the solutions cover a minimum level of accessibility beyond focusing on covering specific needs of users with disabilities.
- Take into account hardware as well as software (human machine access).
- Correctly promote the accessibility criteria of the solutions and provide training to employees on accessibility and usability.

Annex 2 - How can current EU funding programmes or instruments contribute to reducing or addressing accessibility barriers.

In recent years, the European Union has placed increasing emphasis on the need to advance digitisation and its accessibility to the whole of European society. In this context, in addition to the national agendas of the Member States, the EU has included the principles of digitisation and accessibility in different financial frameworks such as the long-term EU budget 2021-2027 (or the Multiannual Financial Framework 2021-2027), structural funds and most recently in the Recovery and Resilience Facility as part of the Next Generation EU funds.

The European Commission funds various projects in the area of digital technology through programmes such as Digital Europe Programme¹, Erasmus+² and Horizon Europe³ among others.

General recommendations regarding all European programmes

¹ European Commission (2022). The Digital Europe Programme. Available at: <https://digital-strategy.ec.europa.eu/en/activities/digital-programme>

² European Commission (2022). Erasmus+ Programme Guide. Available at: https://erasmus-plus.ec.europa.eu/sites/default/files/2022-11/Erasmus%2BProgramme%20Guide2023_en.pdf

³ European Commission (2022). Horizon Europe's first strategic plan 2021-2024: Commission sets research and innovation priorities for a sustainable future. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_1122

Accessibility should be considered as a cross-cutting issue for all European programmes and it is suggested that:

- Accessibility related projects are promoted in EU funded programmes
- The inclusion of user-centred approach in the project's life cycle (ideation, design, prototyping and testing phase) must be a requirement in the funding programmes calls. Therefore, the needs of specific group of population such as people with disability and the elderly must to be taken into account.
- The accessibility of funded project website should be ensured in line with the EN301549.

Recommendations related to the Digital Europe Programme (DIGITAL).

Linked to the European Strategy for Data, it is advised to create a preparatory action (CSA) for a future European Data Space for Accessibility under the Digital Europe Programme (DIGITAL). While the European Commission is promoting the creation of data spaces in different key areas, project partners consider that there is a need to create an Accessibility Data Space. This could foster the information and data sharing in the area of accessibility and the development of new business models. Such a creation could come in several stages. First with a call for a project to analyse the available data sources to be integrated into a future Accessibility Data Space and elaborate its potential governance structure. Second with a call for the implementation of the Data Space.

To consider including digital skills related to accessibility in the future European Skills Data Space.

Include the requirement that any resulting product from the use of state-of-the-art technologies from Specific Objective 5 "Deployment and Best Use of Digital Capacity and Interoperability" is accessible.

Recommendations related to the Next Generation EU's Recovery and Resilience Facility pillars

European programmes that fund projects in digital technology all tackle similar objectives. We could say that, in a sense, Next Generation EU's Recovery and Resilience Facility (RRF) is the widest as there is a certain parallelism between RRF's pillars and the challenges tackled by other relevant programmes:

1. Policies for the next generation, children and the youth, such as education and skills (NGEU – RRF) (**Erasmus+ programme and ESF+ Programme**)
2. Digital transformation (NGEU – RRF) (**Digital Europe Programme**)
3. Green transition, Social & territorial cohesion, Health and economic, social and institutional resilience (NGEU – RRF) (**Horizon Europe**)

Certainly, these funding programmes also can be instruments that contribute to reducing or addressing accessibility barriers in technologies:

Taking as a reference NGEU – RRF pillars, the following recommendations could reinforce ICT accessibility in the ACCESSIBILITECH project thematic areas of telework, eLearning and telecare, based on learnings from the project (especially from the expert thematic workshops and the final conference):

Social & territorial cohesion

The reforms and investments supported by the RRF should contribute to improving social and territorial infrastructure and services, including social protection and welfare systems, the inclusion of disadvantaged groups, support employment and skills development, and lead to the creation of high-quality and stable jobs.

- **Funding programs aimed to foster accessibility conditions in work environments** to improve the inclusion of persons with disabilities and facilitate family reconciliation.
- Take necessary steps to **raise awareness in the labour market of the importance of accessible telework technologies** to avoid barriers suffered by disabled employees and the lessons learnt during the COVID-19 outbreak.
- Development of **rural and remote areas should include accessible ICT technologies to guarantee connectivity and participation** of persons with disabilities in such environments to ensure their ability to access telework, eLearning and telecare.

This is especially interesting in the following programmes:

- ▶ ERDF, especially the specific objective on “a more competitive and smarter Europe by promoting innovative and smart economic transformation and regional ICT connectivity” (PO 1)
- ▶ ERDF, especially the specific objective on “a more social and inclusive Europe implementing the European Pillar of Social Rights” (PO 4)

Health, and economic, social and institutional resilience

Member States have included in their plans reforms and investments to improve the resilience, accessibility and quality of health and long-term care, including measures to advance their digitalisation, and to increase the effectiveness of public administration and judicial systems.

- **Promote policies that encourage implementation of accessible technologies in telecare** to facilitate personal autonomy and independent living.
- **Improve the accessibility of communications channels** that give access to online services related to public administration, judicial systems, and welfare services, so that they are compatible with technical

aids such as automatic voice recognition, screen readers and sign language interpretation

This is especially interesting in the following programmes:

- the RRF (NGEU)
- ESF + related to the specific objective “enhancing equal and timely access to quality, sustainable and affordable services, including services that promote the access to housing and person-centred care including healthcare; modernising social protection systems, including promoting access to social protection, with a particular focus on children and disadvantaged groups; **improving accessibility including for persons with disabilities**, effectiveness and resilience of healthcare systems and long-term care services”

Policies for the next generation

The RRF supports reforms and investments aimed at improving access to general, vocational, and higher education, as well as its quality and inclusiveness, focusing on digital education, early childhood education and care, and youth employment support.

- Take necessary steps to raise awareness and educating those who will educate others. **Teachers should have sufficient competences regarding digital inclusion and accessibility.**
- **Encourage the implementation of accessibility and design for all principles in academic programs** or engineering degrees most directly related with ICT.
- Implement the lessons learnt during the COVID-19 Pandemic and **work for more inclusive eLearning platforms and provision of accessible digital material.**
- **Funding programs aimed to foster accessibility conditions in work environments (including telework)** to improve the inclusion of young persons with disabilities in the labour market.

This is especially interesting in the following programmes:

1. The Erasmus+ programme (2021-2027) of the European Union in the areas of education, training, youth and sports. The programme is one of the strategic components to support the objectives of the European Education Area, the Digital Education Action Plan 2021-2027, the European Union Youth Strategy and the European Union Work Plan for Sport (2021-2024). In this way it aims to improve the digital skills and competences of all, including persons with disabilities and young people with few opportunities. https://erasmus-plus.ec.europa.eu/sites/default/files/2022-11/Erasmus%2BProgramme%20Guide2023_en.pdf
2. HORIZON EUROPE,

3. ESF + objective “promoting equal access to and completion of quality and inclusive education and training... and accessibility for persons with disabilities”.

Annex 3 - Shaping the future AccessibleEU Centre

The creation of the AccessibleEU centre in 2023, as announced in the European Disability Rights Strategy 2021-2030, should aim at supporting the implementation of accessibility policies across the EU, and set the collaboration between the Commission, Member States, accessibility professionals, service providers and persons with disabilities in matters related to accessibility.

Recommendations based on Knowledge Hub learnings

During the 2-year duration of the ACCESSIBILITECH project, it has become clearer that there is a need to create synergies between all key actors involved in making accessible technology in Europe, as there is still a lack of regular interactions and exchanges between them. This also happens in other fields such as the built environment, accessible transport and accessible tourism.

Such collaborations between accessibility professionals, the technological sector and service providers have been tested in the ACCESSIBILITECH project with development of the Knowledge Hub activities. Specific Knowledge and learnings generated in this regard can be used by the AccessibleEU Centre to ensure that they develop the correct strategies and activities to generate a greater impact.:

- It is necessary to have an in-depth knowledge of the whole ecosystem This include firstly to map all key spaces, experts and projects on accessibility in Europe and secondly to conduct a survey to learn more about the perceptions and approach on accessibility of the different stakeholders.
- Organising online workshops with the participation of accessibility experts and representatives of persons with disabilities provides the opportunity to raise awareness on accessibility needs for persons with disabilities and good practices to all professionals involved but it is necessary to find engaging ways to continue with the interaction afterwards and promote exchange and debate.
- When organising workshops or similar activities guarantee that all groups of persons with disabilities are represented by contacting associations at national and international level.
- It is advised to look for new ways to achieve post-workshop participation and interaction, with channels such as social networks or articles in blogs or organiser’s websites.
- ACCESSIBILITECH toolkit and repositories can be used to amplify and create more specific content and of the third-party sources identified to create the repositories as a reference when generating new alliances and searching for new sources and content. It should also be used as support material for the training of professionals in accessibility.

- ✓ The guidelines on accessibility created by ACCESSIBILITECH Team can be incorporated to other guidance and support material of AccessibleEU.
- ✓ Share the content relating to standards and legislation generated in the ACCESSIBILITECH toolkit to facilitate the implementation of the European Accessibility Act.
- ACCESSIBILITECH has identified experts from different EU stakeholder sectors who have participated in its activities and can also participate in events organised by AccessibleEU or be part of the community of practice
- Specific trainings on accessible meetings and events should be given to those responsible for organization of events in all future EU projects, not only those related to accessibility. Having a dedicated staff reference person.

Recommended use of ACCEESSIBILITECH results

Due to the great synergies between the AccessibleEU Centre and the ACCESSIBILITECH project, in order not to duplicate efforts, it is advisable that the AccessibleEU Centre take the following results obtained in the ACCESSIBILITECH project as a base from which to continue building.

- Use of the mapping tool as a reference point and search tool for good practices on accessible solutions in the three areas of: telework, telecare and e-learning.
- Use of the ACCESSIBILITECH CHART to follow the approach, experience and learnings obtained in the construction of the active listening and mapping tool will serve as the basis for the construction of future possible tools.
- Use of the mapping of key actors through the knowledge hub and solutions from the mapping tool to establish a powerful network.



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