AI Glasses – An Acceptable Privacy & Accessibility Compromise?

Balancing the benefits of AI glasses against GDPR and the rights of Persons with Disabilities.

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Abstract

This paper examines whether AI glasses that can provide information on the users' environment should be considered as assistive technology, as they have the potential for being an extremely valuable tool for those with a range of disabilities.

Many AI glasses capture and process personal data without notification or consent of those being recorded. This creates a conflict between usability, accessibility and privacy in relation to regulations such as the EU General Data Protection Regulations (GDPR[1]), EU AI Act[2], United Nations Convention on the Rights of Persons with Disabilities (UNCRPD[3]) and the Charter of fundamental rights of the European Union[4].

We examine whether Meta AI glasses meet the requirements for Assistive Technology and whether AI glasses can be used by people with disabilities, whilst respecting disability and privacy rights?

AI glasses are produced by an increasing number of manufacturers, with differing features, some including cameras and augmented displays. The market is currently dominated by Meta (68[5]-81[6]% share), who have promoted their glasses as assistive technology for those with visual and hearing disabilities.

We conclude that glasses that incorporate cameras and central AI processing (such as those made by Meta), do not meet the requirements of either the UN CRPD or GDPR and are therefore not suitable as Assistive Technology in their present form.

Some AI glasses exploit social and economic vulnerabilities of the disabled community. Glasses such as Meta Ray-Ban display offer an affordable alternative for expensive assistive technologies, but at the expense of trading privacy for accessibility.

We also believe that use of these glasses to capture and process people data without notification or consent, is likely to be illegal in the EU and UK under GDPR and the EU AI Act. A blinking light does not notify people that their data is being processed and provides no notification at all to people who are blind or have low vision.

Based on these outcomes we recommend that further work is done to determine how this new technology can be used to benefit users with disabilities, whilst meeting privacy and accessibility requirements of all stakeholders with and without disabilities.

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Introduction

Aim

This paper is written in search of the questions;

- Are Meta Glasses an assistive technology that meets the requirements of both the:
    - UN Convention on the Rights of Persons with Disabilities (UN CRPD)[a]
    - Privacy requirement under GDPR and similar regulations?
- Can AI glasses be used by people with visual, hearing and/or neuro related disabilities without breaching GDPR privacy regulations?

Reading this paper

This paper is the outcome of combining research from a Human Rights Perspective assessing the impact of technology on the disability community, with technical research assessing AI glasses with respect to GDPR.

In this paper we are combining Human Rights with the Technical approach. Starting with an introduction with explaining the definitions of AI glasses and what assistive technology. Followed by a short explanation why this paper uses Meta-Glasses as an example.

This analysis was done using desk-based research and use of Meta Ray-Ban display glasses. We do not claim that this is an extensive technical or legal analysis. We wrote this paper to highlight potential issues and make suggestions on resolving what has become a highly controversial issue.

a The decision for the UN CRPD lies in the overarching responsibilities, and reviewing 27 transpositions of the EAA and other accessibility legislation does not always cover the reach of the impact this technology has.

What are AI glasses and how do they differ from Smart glasses?

Meta define Smart glasses as follows:

> *"Smart glasses are normal-looking eyewear with discreetly integrated glasses technology. At a glance, these glasses look like normal sunglasses or prescription glasses, but inside, they include tiny speakers, microphones, a lightweight camera or even a small display that sits within your field of view...*

AI Glasses

> *"AI glasses from Meta, on the other hand, actively assist and respond to you in real time with a simple voice prompt." – Meta/learn7*

Glasses used in this paper

We examine Metas AI glasses, such as the **Meta Ray-Ban Display**[8], that use cameras, microphones, gestures and AI to answer users' questions and interpret the environment that they capture.

Why this paper uses Meta-Glasses

Meta are the market leaders in AI glasses. They have submitted their glasses as being suitable for those with hearing loss. They have also been promoting them to:

> *"Empower people who are blind or have low vision"*[9]

Meta have even recommended using their glasses to read personal documents like pregnancy tests and bank balances[10],[11]Some Meta glasses can be fitted with lenses for prescriptions between –12 to +6 total power[12]. However, you can't change your prescription later on glasses with displays[13], so this becomes expensive for users whose vision loss is progressing over time.

The display glasses can also be used to magnify what the camera sees, add colour filters or describe colours. They can also enable screen readers and help people with low vision and/or light sensitivity.

Meta has donated glasses to several organisations for the blind in the US[14], Canada, Singapore and Ireland15. They have also funded training[16] and partnered[17] with disability organisations, to develop their glasses as assistive technology.

Volunteers from Be My Eyes[18] provide descriptions of images sent to them by blind users, typically through their phone or other camera equipped devices. Meta allow users to connect their glasses to provide live data to Be My Eyes, so that volunteers can

experience what the wearer sees and hears and assist them. Be My Eyes provides data from other sources to train Meta AI[19].

Meta glasses have also raised public and regulatory concerns regarding privacy and accessibility which are the key concerns of this paper.

Controversy or opportunity?

Metas work with organisations for the blind has raised the awareness of these glasses within the community, and many users have found them to be extremely helpful.

However, there has been considerable public backlash against AI glasses following Metas' recent marketing campaign in 2026, which state that the glasses were

"*Designed for privacy, controlled by you*"[20],[21]

Concerns have been raised that people have been using AI glasses to covertly record and post videos onto social media that either embarrasses[22] or ridicules the people being filmed. There have also been reports of people using the glasses to record intimate videos[23], harass and extort[24] people and create "nudification" content[25]. This has led the products being nicknamed "*Pervert glasses [26], [27]*".

There have also been allegations that the glasses have recorded without the knowledge of the user or those being recorded (reported that Meta confirms this [28]). Further allegations state that explicit recordings were sent by Meta to contractors in Kenya[29] to train AI without notification or consent[30]. This incident is now the subject of several lawsuits.[31],[32]

Assistive Technology

Technology is often seen as empowerment and a bridge to independence[33] for people with disabilities. This started with the invention of typewriting in 1714[34] and has continued up to the present-day use of AI glasses.

The disability community however is divided in two groups;

- Those who see a high willingness to adopt technology faster than their peers without disabilities[35],[36]
- Those that are more cautious late adopters. RNIB research in 2021 shows that:

> *"More than half of blind and partially sighted people are late adopters of new technology."*[37]

This divide within the visual disability community calls for a careful consideration, Can AI glasses be a safe assistive technology?

The current case with Meta, shows that when general technology is available against a more expensive Assistive Technology, people are inclined to use the cheaper alternative, even when this has inferior functionality[38]. However, they are often unaware or in some cases even ignore the privacy issues, in favour of an affordable product to provide increased independence.

Touching the point assessing if the Rights of persons with disabilities are at stake in a case where a commercial technology/product is possibly utilizing the economic and social vulnerability of the disability community.

Meta Assistive technology claims

Meta states that its Ray-Ban Display glasses:

> *"Provide helpful utility to those with reduced vision, hearing or mobility by offering the ability to perform tasks that typically require using a phone, hands-free."*[39]

Meta also claims that their glasses provide the following features that can be classed as Assistive Technology:

- Optical Character Recognition to read street names, menus, general text etc.
- Speech synthesis to describe what the cameras are viewing, provide navigation etc.
- Access to an independently run "Be my eyes" application, which lets volunteers help the user by giving them access to the audio/video feed from the glasses. (NB there are concerns over this service due to privacy[40] reports of harassment [41] and facial recognition).
- Transcription and display of speech in near real time.
- Noise cancellation and amplification of speech through their "Conversation focus" feature[42].

Meta intends to supply a new Hearing Enhancement feature[43] in late 2026 for an additional fee or subscription. This has been cleared by the US FDA as meeting the requirements for an "Over The Counter" hearing aid for mild to moderate self-perceived hearing loss (NB this is not the same as FDA Approval).

Commercial technology versus assistive technology

Accessibility is a fundamental right for persons with disabilities. When products or services are not fully accessible as result of technology or specific disability characteristics, people can use Assistive Technology to mend the gap.

Many accessibility experts welcome mainstream technology being adapted to provide Assistive Technology, as it often reduces cost and makes products more available.

This paper is about a mainstream **commercial technology** with Assistive Technology benefits, not an Assistive Technology gone mainstream. **Meta-Glasses were not designed as Assistive Technology**. They were designed with a commercial goal which appears to ignore the impact on the privacy and safety of persons with disabilities.

This brings us to the first point, assessing the product of Meta-Glasses as assistive technology: the intent of design was commercial and not assistive technology.

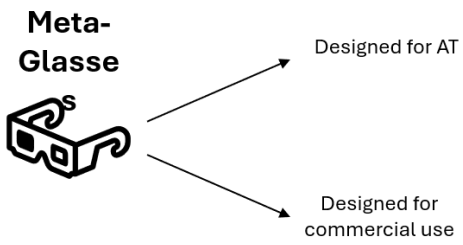


Figure 1: Flow-chart Assessing Meta-Glasses as assistive technology:

When a product is designed as **Assistive Technology**, the commercial interest[b] is based on Return of Investment and funding R&D, assuring availability of the product. Assistive technology is generally produced outside the commercial markets and "*designed to improve the functional capabilities of people with disabilities*."[44]

The introduction of Meta-Glasses (and other commercial AI glasses) brings **Accessible Technology**[c] into a new perspective. Starting a debate about **commercial technology** with accessibility/assistive benefits without additional actions. This is referenced to as a technology defined as **accessible technology**[d] provided by a **commercial technology** with accessibility/assistive benefits without the need for modifications or adaptations.

b Designing with commercial intent is designing with the intent of profit, commercial interest reference to assuring a product can survive without being subsidized for example in social entrepreneurship.

c Introduced in 2015 with the book: Ensuring Digital Accessibility through Process and Policy, by Jonathan Lazar, Daniel Goldstein and Anne Taylor

d Introduced in 2015 with the book: Ensuring Digital Accessibility through Process and Policy, by Jonathan Lazar, Daniel Goldstein and Anne Taylor

Call for allowing mainstream commercial tech as assistive tech

Having access to assistive technology which does not make you stand out as a person with a disability offers an attractive alternative to previous AI glasses or the high-cost assistive technology alternatives.

The call for this type of commercial technology to be allowed as assistive technology is supported by the recent report by European Disability Forum, Policy Paper on Assistive Technology in the EU[45] published on 22nd October 2026 in Dublin. The paper emphasized mainstream technology being allowed as assistive technology based on the functional need of the users.

Recognising AI glasses as mainstream technology with accessibility benefits and potentially as Assistive Technology raises important questions about the rights and protections associated with their use. These rights may include being eligible for reimbursement of some of the costs of the glasses, which would make them available to those on low incomes. There could also be legal protection and exemptions for users with disabilities to use the glasses in public and other spaces where they are banned or restricted.

Examples of smartphones in schools for access to assistive functions[46] or guide dogs[47] are the result of disability rights prevailing public, private and legal policies in support of participation.

How Meta Ray-Ban Display AI Glasses Work

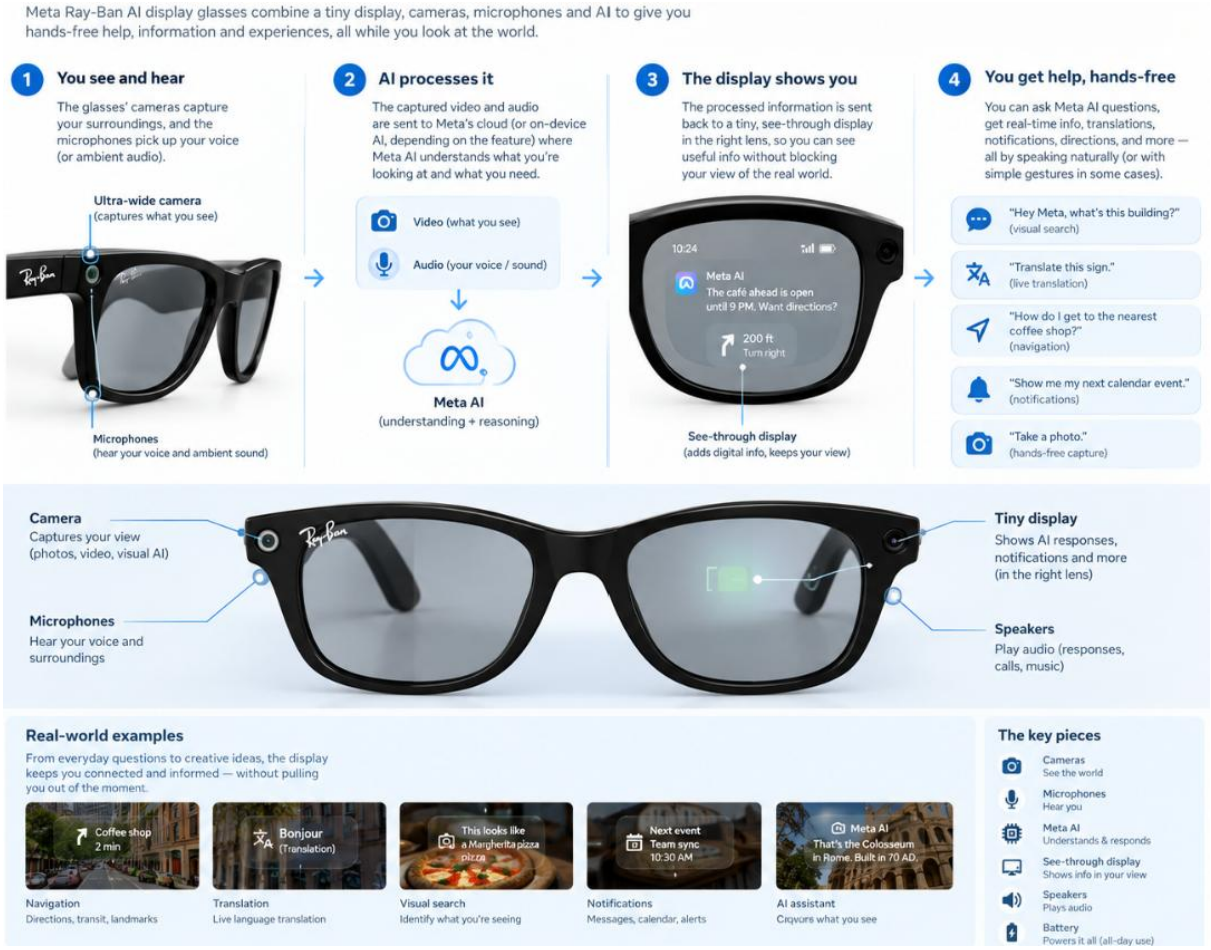


Figure 2: Image describing Meta Ray-Ban display glasses

Meta Ray-Ban Display glasses combine conventional glasses with a high-definition 12Mp camera with 3x zoom, six microphones and speakers in the arms.

The glasses connect via Bluetooth or Wi-Fi to a companion application on the users' phone which allows the user to connect to Meta AI cloud services.

The users can control the glasses through voice command, touchpad on the glasses or via a "Neural band" that recognises the users muscle signals in their wrist. These commands can instruct the cameras to record audio, video and photos. Commands can also be used to ask the AI questions which can be answered on the display screen on one lens and/or through the speakers on the arms of the glasses.

Additional features allow the user to save photos videos and audio recordings and share these on social media. It also allows users to livestream what they are seeing directly to Facebook and Instagram.

How to activate AI – captures audio and video

- Say "Hey Meta"
- Tap and hold the touchpad on the arm of the glasses
- Pinch thumb and finger whilst wearing the Neural band.
- Meta state that "*Recording only happens when the wearer deliberately activates it – by voice command or button tap*" but this is incorrect and Meta have admitted that some recordings have been made without users being notified [48].

Data Flows

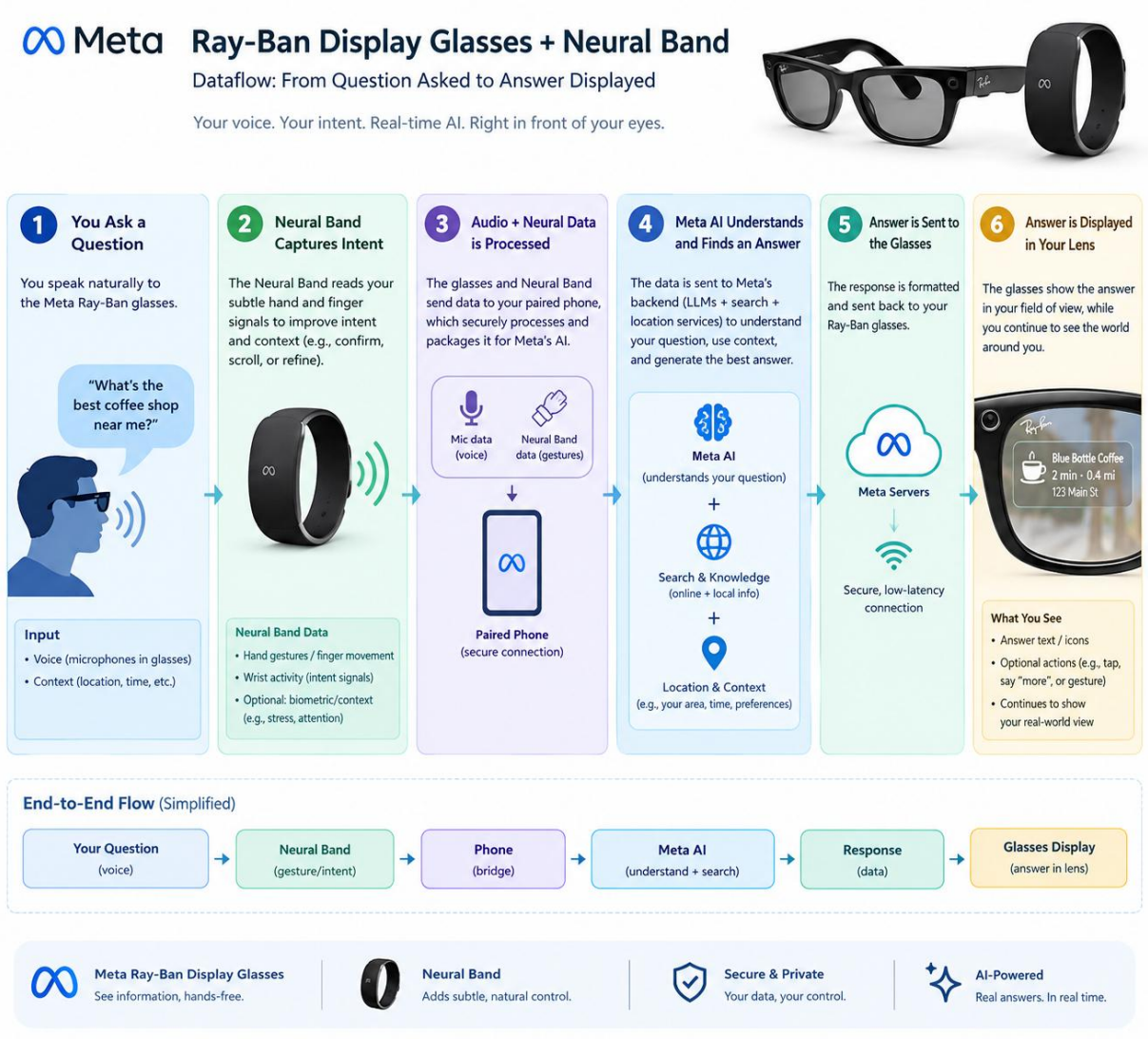


Figure 3: Image illustrating data flow answering a user's question using AI

Data processing

Data capture

Data that can be captured by:

- Microphones – audio and user commands
- Camera – video, photos and spatial data
- Neural band – commands, text
- Glasses – device ID, user, time, date
- Phone – location, Bluetooth/Wi-Fi, third party apps etc

In addition, the user can make requests to the AI using voice or neural band e.g. "*What am I looking at*", "*Play my favourite songs*" etc.

Transmission to the users' phone

- Using Bluetooth for low data queries voice commands etc
- Wi-Fi for large files – video etc
- Concerns have been raised that this transmission could be vulnerable to adversariale attack[49]

Transmission to Meta cloud services

- Using mobile provider or Wi-Fi
- Recordings may be saved to User account, companion app and/or
- AI requests are sent for AI processing

AI processing

- Meta AI processes user requests, generates responses and handles data.
- Potential human review, especially if AI detects content that may breach terms of service[50]

AI Response to user

- May be voice through speakers or displayed on the lens

Additional optional step - AI training/fine tuning AI models

- Data sent to be used for training AI models
- Typically, this would involve video/audio or transcripts being sent to humans to be annotated and classified.

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e Adversarial attacks are malicious techniques to manipulate, exploit, or misdirect machine learning and potential opportunities for hackers.

Potential improvements

Meta announced its new Private Processing Architecture proposal[51] for AI glasses in September 2026. This was seen as an answer to some of the privacy concerns raised by EU and UK regulators and others. This architecture has been used on Metas WhatsApp product[52] and is being proposed for use with AI glasses. Meta claims that the solution is place but has not confirmed as to when it will be implemented for users[53].

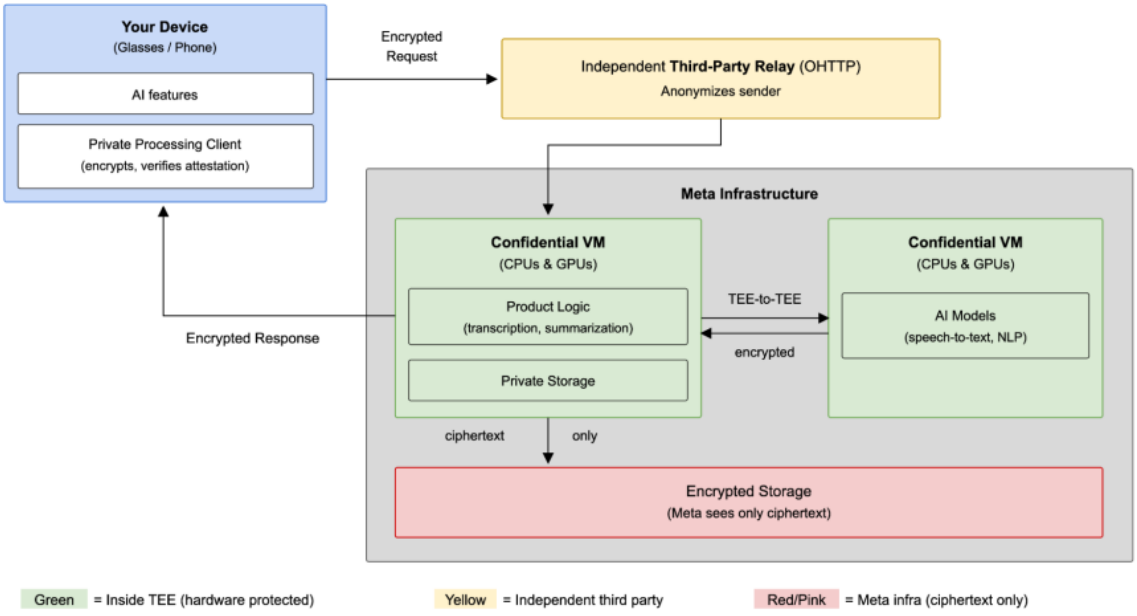


Figure 4: Proposed Private Processing Architecture, Meta, September 2026

Data collected

AI glasses and devices like Meta Neural band can collect the following information:

Audio

- Audio recordings
- Transcripts of audio recordings
- User questions/prompts to AI
- Answers to questions/prompts

Video and spatial data

- Still images
- Video images with audio
- Spatial information about objects captured by the cameras

Location data

- Users' location
- Timestamps

User data

- Name
- Username
- Profile picture
- Muscle signals (Neural band)

Device data

- Bluetooth connectivity data
- Wi-Fi connectivity data
- Connections to third party applications
- Battery status and condition
- Data to ensure that your devices function consistently with user settings
- Device usage, time, date,
- Device operating conditions – e.g. temperature etc
- Operating system information
- Any errors or crashes that occur
- "Other" data required to ensure that the devices function properly
- Data used to understand and improve the information and operational security of the devices, such as data associated with potential software viruses and security intrusions

On 5 March 2026 the UK ICO asked Meta to be more transparent about the data it collects and how it is used (the letter and any answer have not been made public).

NB Meta has not provided specific information on the data that it captures on its website. The authors have asked Meta to provide more information but have yet to receive an answer.

Assessing risks

Meta-Glasses are a good example of mainstream commercial technology that the EDF policy paper is encouraging. The EDF recommends that devices are:

> *"technology-neutral, allowing for both traditional specialized AT and digital/mainstream technologies;"*[54]

The policy paper however does not include the risks discussed in this paper.

In this section we assess the key risks of mainstream AI glasses when used as assistive technology:

- **Privacy** – concerning privacy of the data of the user such as: data storage on device or in the cloud, who has (third-party) access to the data in case this is in the cloud, and how is security of privacy related data granted?
- **Security** – concerning both privacy security of data storage as well as how the device is protected against cyber-attacks/intrusions?

Introducing AI in assistive technology increases complexity:

- **Privacy** - how long is AI training data stored, how is AI data processed (machine learning or in person), how is this data used in relation to other AI training processes, who has access to the data including third parties for AI data processing, are there vulnerabilities in data transfers from device to for example the smartphone?
- **Security** – What are the controls in place securing data, how is personal data anonymized, and is it possible tracing data back to individual users?
- **Transparency** – How open is communication on privacy, security, and intent of AI training data, which third parties are involved in AI data processing, is the outline of the process shared with users?

Using the example of Meta-Glasses, we now need to decide: Is the use of Meta-Glasses in the best interest of persons with disabilities and safe to use as assistive technology?

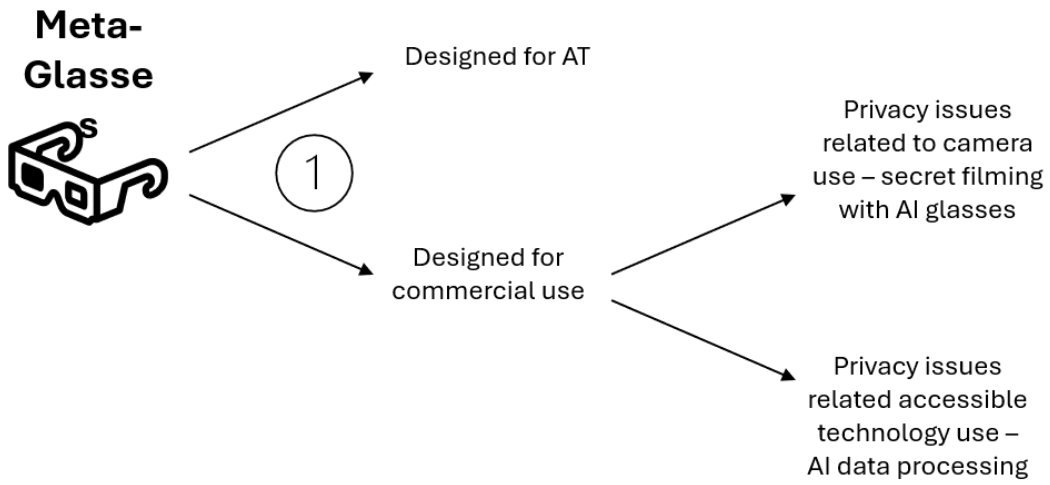


Figure 5: Flow-chart Assessing Meta-Glasses as assistive technology: *introducing privacy related to secret filming and privacy in relation to AI Features for the accessible technology use.*

We also need to review whether AI glasses meet the privacy requirements of GDPR.

Assessment Against EU GDPR

GDPR requires that users are informed about the data that is being collected about them and how that data is processed. This should be presented in such a way that a reasonable person can understand how their data is being processed and make an informed decision without needing specialist legal or technical advice. This is particularly important when data is being collected about children under 13 or people who are unable to give informed consent, when parental or other consent may be required.

Applicable GDPR principles

Article 2 - The Householder Exemption

Article 2 provides an exemption to GDPR for:

> *"a natural person in the course of a purely personal or household activity".*

We believe that this exemption is not applicable because the data from the glasses is sent to Meta for processing. It is also unlikely to apply to any data that is made widely available, e.g. posted on the internet.

The judgement in Rynes also concludes that recording of video/audio data from a public space when stored on a device does not meet the requirements of this exemption.

The Hamburg data commissioner has categorically stated that this exemption does not apply when the data is used to train AI.

There is a second exemption that applies to journalistic, artistic, literary, or scientific purposes, which is covered under Article 85 - (Media privilege). However, this would not apply in most cases.

Article 5 - Principles relating to processing of personal data

Article 5 states that: " *Personal data shall be:*

- *processed lawfully, fairly and in a transparent manner in relation to the data subject ('lawfulness, fairness and transparency');*
- *collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes*;"

Potential breach

- People may be unaware that their data is being collected because AI glasses are practically indistinguishable from normal glasses.
- People being recorded may be unable to see the indicator or the indicator may not be illuminated, as the user is not saving the recording to their account.
- The person being filmed may have impaired vision and unable to see or identify the AI glasses or when the recording light is activated.
- People may be recorded in circumstances where they would not reasonably expect to be recorded (changing rooms, medical treatment etc) and were not notified that their data was being collected.

Article 6 - Lawful basis for Processing

Article 6 requires that companies can only process data with either the consent of those being recorded or a "legitimate" interest (necessary operation, prevention of fraud etc).

Particular consideration should be given to the "*fundamental rights*" of the data subject, particularly where the data collected belongs to a child (typically under 13).

Potential breach

Meta have yet to state a *"legitimate interest*" and lawful basis for processing personal data of bystanders who have:

- a reasonable expectation that they should be informed of the purpose for which the data is being collected
- not been notified of the processing,
- not given consent,
- not been informed or agreed to Metas terms of service
- not been informed or agreed to Metas privacy agreement.

Meta AI glasses do not notify users that they are being recorded, and their personal data is being processed by AI. Meta relies on an LED on the front of the glasses to notify bystanders, however this light only illuminates when the user saves a recording to their account. It does not illuminate when the data is just sent to Meta AI for processing.

Blind bystanders cannot be notified by this LED, as they can't see it.

There may be a case of legitimate interest where those with a disability are using the glasses for social interaction or navigation, outweigh the need to get consent from users. However, this would need to be done on a case-by-case basis (e.g. when the user is in a medical setting or changing rooms). It is unlikely to apply if their data is used to train AI or to build a profile of the person being recorded.

Article 7 – Conditions for consent

Article 7 defines what information must be collected if the company is relying on the consent of the person who's data is being captured and processed. This requires that they are clearly told that their data is being processed, that this consent is recorded and that they have the right to withdraw that consent at any time.

Potential breach

- Consent is not required by the glasses before processing the data.
- People have not been asked for consent, and many will not know that their data is being processed.
- It is unlikely that any record of consent is recorded, apart from situations where the user asks for consent once recording and data processing has already started.

Article 9 - Biometric Data and Special Characteristics

Article 9 states that processing of special categories of data requires explicit consent. This includes biometric data (facial, features, voice gait etc), or any other data that could uniquely identify them.

Potential breach

- AI glasses with cameras and microphones can identify biometric data and special characteristics through analysis of audio and image recordings, without notifying or requiring the consent of the person being recorded.
- Consent is not required by the glasses before processing the data.
- People have not been asked for consent, and many will not know that their data is being processed.
- It is unlikely that any record of consent is recorded, apart from situations where the user asks for consent once recording and data processing has already started.

Articles 12,13 &14 - Notification and privacy notices

The Data Controller is required to provide clear, accessible privacy notices before or at the time the data collection occurs and that it is being processed by automated decision-making software.

Potential breach

- Users are typically not aware of their responsibility in this regard.
- Meta do not inform people being recorded (the data subject), that their data is being processed or what privacy notice applies.
- Metas privacy policies are captured in several different documents on different parts of their website, run to over 19,000 words and are difficult to understand. Several studies have therefore concluded that users are unlikely to be able to provide meaningful consent[55]
- "*The mere illumination of the LED alone is not sufficient to adequately inform data subjects about the data processing*" Hamburg data commissioner. This LED can't be seen by people with low vision or who are blind.
- The "recording" LED is not activated when the data is just being processed by Meta AI.

Article 17 – the right to be forgotten

"*The data subject shall have the right to obtain from the controller the erasure of personal data concerning him or her without undue delay*."

Potential breach

- People may not be aware that their data is being captured and therefore that they have a right to have it deleted.
- Any data or model changes made before the objection by third parties will not be deleted retrospectively.
- Data that has been used to train or fine tune AI and associated changes to model weights, which may be used to provide answers to third parties, cannot be removed. This has led to privacy breaches in other AI models.

Article 21 – Right to Object

The data subject shall have the right to object, on grounds relating to his or her particular situation, at any time to processing of personal data concerning them. In which case the personal data shall no longer be processed for such purposes e.g. Training AI or for marketing etc.

EU users of Meta products were opted in to having data used for AI training by default from 27 May 2025.

Potential breach

- Bystanders are typically not notified that they are having their data processed and therefore are unable to object.
- Users and third parties were given the ability to opt out of video data being used from September 2026, **but not audio** data.
- Even if users opt out of video data being used for AI training it may be reviewed by humans for compliance with terms of service.

Article 25 - Data Minimisation and Privacy by Design

This requires companies and in this case the user, to protect the identity of those being recorded and whose data is processed by using techniques such as blurring faces or altering voices. Companies also have an obligation to only capture personal data which is necessary for a specific purpose.

Potential breach

- The current design of Metas AI glasses and processing architecture means that data is not anonymised on device.
- We are not aware of any attempt to anonymise the voices of people captured by the glasses or whether gait recognition data could be collected.

- Video and audio data is captured which is not necessary for the intended purpose. E.g. a user may ask, "*What is that building*?" And the glasses and AI will process audio and video data of people in view, in addition to the building
- Data is also transferred to the users' phone and thereafter to the cloud for processing, as opposed to processing on the device, which would provide better privacy and security.
- Meta has not yet implemented its new Private Processing Architecture proposal for AI glasses.

Article 32 – Security of processing

Companies are required to ensure that data is stored, transported and processed in a secure manner and to use pseudonymisation and encryption of personal data.

Potential breach

- Meta does not anonymise the data whilst it is being captured.
- Meta does attempt to filter data, such as blurring faces and licence plates. There are reports that these have failed and there are ongoing regulatory investigations and lawsuits concerning the transfer of personal information and intimate images to contractors in Kenya for training AI.
- Meta has not yet implemented its new Private Processing Architecture proposal for AI glasses.

Article 35 – Data protection impact assessment

GDPR requires that the Data Controller carries out a data protection impact assessment. The EU Data Protection Board concluded that both the user and the company processing the data have joint responsibility as Data Controllers under GDPR.

Potential breach

- Meta has not published a formal Data Protection Impact Assessment on its responsibilities under GDPR.
- It is highly unlikely that the users of AI glasses are even aware that they are Data Controllers and what that responsibility entails.

Article 82 Liability

This states that the supplier, Data Controller and /or Data processor are liable for material or non-material damage caused by processing that infringes the GDPR regulations.

Potential breach

- The EU Data Protection Board have concluded that the user and Meta are joint Data Controllers in situations where the AI function is used.
- We have also found that many users are unaware that they are Data Controllers and what their responsibilities are in this respect. They are also unaware of their responsibilities under GDPR and accessibility regulations.
- It is therefore highly unlikely that users would have appropriate indemnity insurance in place, were claims to be successful against them.

Discrete operation – covert capture

Meta-Glasses are designed to be discrete, and Mark Zuckerberg was reported to say that they look just like regular glasses but will "*do some pretty neat things*". This can be attractive to disabled users, as they can use a mainstream product as assistive technology, without disclosing their disability.

LED indicator to notify users

Metas AI glasses with cameras include an LED that lights up when the user saves a recording to their personal account. Meta promotes this as their method for notifying bystanders that the glasses are capturing photo or video and ensuring privacy.

"A light you can't miss"[56]

"The capture LED lets others know when you're capturing content or going live."

"The capture LED is just one of many ways we have built privacy into our AI glasses from the ground up."[57]

These statements are incorrect.

The indicator only illuminates when the user requests a recording is saved to their account. The light can't be seen by those with severely impaired vision or who are blind.

The light does not illuminate when the recording is only used by Meta AI e.g. through neural band activation or voice command e.g. "*hey Meta – what am I looking at?*".

"AI without LED on: when using AI features that rely on the camera (e.g., identifying a landmark or a plant), the LED does not turn on in newer models,"[58]

NB "*Hey Meta*" is only required for initial activation of the AI. The user can continue to use the AI after the initial prompt without saying "*Hey Meta*" to every question.

Neural band

Metas Ray-Ban Display glasses no longer require a voice prompt - many functions, including taking photos and videos, can be controlled using their **Neural Band** with a simple finger and thumb pinch.

> *"The band... interprets the natural signals created by your muscle activity to navigate the features of Meta Ray-Ban Display. Using subtle hand movements, and guided by haptic feedback, you can read and quickly respond to messages, accept calls, silently engage Meta AI and more without having to touch your glasses or take out your phone." Ray-Ban*[59]

The Neural band also allows users to use their finger to "write" discretely to ask questions etc without any need for pen and paper.

This makes it practically impossible for bystanders to know whether the user is interacting with Meta AI and capturing data about them, as there is no visual or audible cue[60].

Right to be informed

Article 50 of the EU AI Act also requires that providers and deployers of AI systems must inform individuals when they are directly interfacing with an AI, especially if their biometric data is being captured. Such information is not provided to bystanders.

Fundamental Rights at Risk

The Fundamental Rights of EU citizens must be respected. For disability rights, this includes the obligations under Article 52 of the EU Charter of Fundamental Rights[61]:

> *"3. In so far as this Charter contains rights which correspond to rights guaranteed by the Convention for the Protection of Human Rights and Fundamental Freedoms, the meaning and scope of those rights shall be the same as those laid down by the said Convention. This provision shall not prevent Union law providing more extensive protection."*

Note: Beyond the EU, Fundamental Rights are protected under equality laws, recognizing the minimal level of protection of disability rights to be based on the UN CRPD when signed[62]*. This offers the opportunity to apply the conclusions from this paper to local legislative obligations protecting the rights of the disability community.*

For the purpose of this paper, and usability throughout the EU, the paper will base its analysis on the UN CRPD as a common legal binding document, setting the minimal requirements for governments in protecting the rights of persons with disabilities living in EU countries.

The Right to Accessibility

The right to accessibility is covered in Article 9 of the UN CRPD, including access to digital products[63] such as Meta-Glasses. States are responsible for promoting access to new communication and information technologies. Under this condition, access to Meta-Glasses seems logical[64]. As with any law, international governance as set by the United Nations, comes with interdependencies weighing benefits and risks.

Article 9 (and other benefits resulting of accessibilityf) cannot be looked at without examining the responsibilities governments have beyond providing access to technologies.

Full rights and freedoms listed in Article 4[65] come with respect for privacy too. This is also supported by the principle of equal protection before the law, listed in Article 5[66].

Whilst it is fair and legal to provide extra support to disabled people, so that they can participate equally in everyday life, it must never compromise anyone's human rights, including the right to privacy. This is encapsulated in Article 12[67] of the UN CRPD, which states that disabled individuals have the same rights as everyone else. Because of this governments have a legal responsibility to ensure that new assistive technologies must respect their privacy, dignity and personal freedom

Rights for protection

Fundamental rights for persons with disabilities go beyond the right to accessibility. Under the UNCRPD, fundamental rights must also be assessed on:

- Freedom from exploitation, violence and abuse (A.16)
- Protecting the integrity of the person (A.17)
- Freedom of expression and opinion, and access to information (A.21)
- Respect for privacy (A.22)

In the next section we will assess UN CRPD articles discussed in a weighable outcome on which local accessibility/disability law is based – *including fundamental ground rights protected in constitutional laws and in extend for example protected characteristics[68] under GDPR (General Data Protection Regulation).*

f The EDF policy paper explains the impact of accessibility requirements in support of utilizing other rights such as employment, education, independent living, etc.

Can the product with accessibility benefits be qualified as assistive technology in the best interest of persons with disabilities?

Conclusion assessing disability rights:

AI glasses can be used in situations where people would expect privacy. They can covertly record and process highly sensitive personal data including biometrics, usually without notification or consent from the people being recorded. They could also be a threat to the health, safety and rights of disabled users and bystanders as many companies, like Meta, are promoting them as assistive technology. E.g. some users are promoting the glasses to cross roads[69], ignoring the lag in getting a response from the AI, incorrect responses from the AI and potential loss of Bluetooth, Wi-Fi or internet connection.

We therefore believe that these products classify as high-risk[70] under the EU AI Act. Such a classification requires independent safety and regulatory checks, particularly if these devices are being sold as a healthcare product.

Should Privacy Be Traded Against Accessibility?

Can AI glasses, based on technical neutrality[71] become assistive technology and meet the best interests of persons with disabilities?

Article 22 of the UN CRPD states that:

> *"Parties shall protect the privacy of personal, health and rehabilitation information of persons with disabilities on an equal basis with others."*[72]

We have already shown how Meta AI glasses do not protect the privacy of either the user or those being recorded. E.g. when a visually impaired user utilises the glasses to read personal correspondence, bank statements or medical data, it may be seen by third parties and/or used for training AI, models. This creates a disproportionate privacy risk for disabled users, as they may rely on AI glasses for basic daily tasks, thus breaching article 22.

Many organisations have banned the use of AI Glasses and some countries are also considering bans[73], due to privacy concerns, this could be seen as discriminatory, if a disabled user relies on the glasses as Assistive Technology.

How is privacy exchanged for accessibility?

Is the user functionality impacted if you opt-out of your data being used to train AI? Meta confirms in their product information[74], that users will lose key functionality if users opt out of their data being used for AI training e.g.

- Visual reminders - where you ask Meta to remember where you left your keys etc.
- Personalised memory/context - e.g. what your bottle of pills looks like, or what food you have left in your fridge.

The information suggests that the opt-in function is required for full utilization of the AI features supporting the assistive tech functions as described by Meta.

The requirement to stay opted in to have your data used for AI training, results in an unequal position of dependence and social vulnerability on Meta, where the disabled user is forced to exchange lack of privacy for accessibility.

This position of inequality is extended by the affordability (economic vulnerability) of Meta-Glasses compared to existing approved assistive technology products, which are expensive and often out of reach, as result of complex reimbursement processesg.

Metas' marketing of their glasses as an assistive technology is important. E.g. The website of Vision Ireland showing a person reading a letter[75] with the glasses is a clear promotion of using the glasses with day-to-day tasks at home without the need to ask other people for help.

A strong assessment on respecting this privacy and dignity of persons with disabilities is required, as recognised by organisations such as RNIB.[76]

The key concerns for privacy are:

- Is the AI training data used to train AI based advertising?
- How is Meta processing sensitive data, what does anonymizing entail?
- How does Meta process unintended AI recordings in privacy sensitive situations, can this be used for training?

All of the above impact the integrity of persons with disabilities, whether we talk about sensitive information which can be seen by moderators, or the breach of privacy which is a breach of integrity. These are connectable to the decisions points (1, 2, 3) shown in the flowchart below.

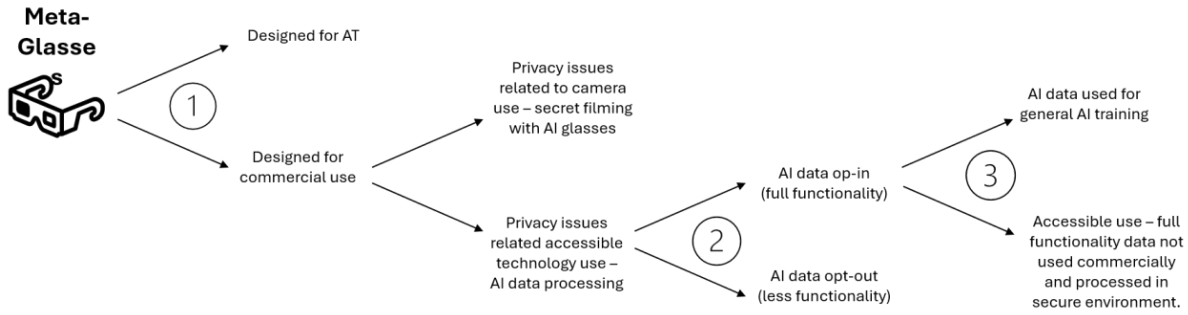


Figure: *Flow-chart Assessing Meta-Glasses as assistive technology: providing a full overview of decision options where commercial decisions resulted in choosing for commercial use.*

g Existing and approved assistive technologies.

Meta-Glasses as assistive technology

Meta-Glasses were not designed as assistive technology, but can they be used ethically to help people with disabilities?

- This is not found nor supported by the public available resources and Meta supports this by sharing assistive functions are provided, in practice a visual position in context of a room is shared, for a blind user this requires specific prompts[77] to know where this is from the user's position. Proving that the design was not intended for persons with disabilities.
- The intent of Meta is not to opt-out on AI training data sharing, both by the setting not being offered by default, secondly because Meta strongly empathizes on full functionality of AI features by opting-in, and third the description of the assistive functionality is strongly connected to the AI feature of the glasses. Resulting in being pushed to accept accessibility in exchange for privacy;
- Where we can understand the need for Meta to collect the AI training data improving the functionality of the product – this is also the case for assistive technology. There is no intent of keeping the disability characteristics (health information related) data separated from Meta's commercial AI data warehousing (decision point 3 in the graphic below). This concludes that Meta uses the assistive data for commercial interests and this not just for the purpose of improving the lives of persons with disabilitiesh.

Connecting these to the UN CRPD obligations concerning privacy (A.22), integrity (A.17), exploitation (A.16) and freedom in decision making (A.21), decision point 2 is about the exchange of privacy for accessibility, which indicates using vulnerabilities results in exploitation, and decision point 3 where all responsibilities come together in a final opportunity - choosing whether to improving the lives of persons with disabilities or the wider commercial interest of a product.

h Improving AI training models with data concerning disability is important moving AI models to be disability inclusive. Though this must be communicated clearly as the data has a commercial interest.

Our conclusion is that **Meta-Glasses cannot be classified assistive technology**, they are a mainstream commercial technology with accessible benefits, with the potential of becoming assistive technology.

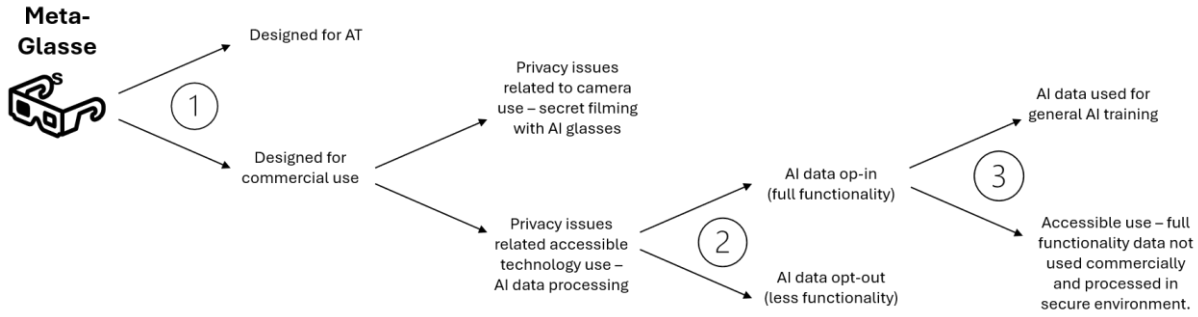


Figure: Flow-chart Assessing Meta-Glasses as assistive technology: providing *a full overview of decision options, where commercial decisions resulted in choosing for commercial uses instead of designing as an assistive technology.*

Transposing Human Rights in responsible AI decision making

In the previous section we described why glasses such as Meta Display, with their current architecture, do not meet the requirements for Assistive Technology for people with a visual disability. We suggest that the decisions taken show that Meta AI glasses were not developed as a means of improving the lives of persons with disabilities. This is compounded by the decision to not offer a safe setting of processing AI training data of persons with disabilities in a dedicated environment.

The flow-chart shows the outcomes related to the decision points: 2 where the opt-out option results in not being an assistive technology because the technology is not fully functional. And 3, that AI training data is used for general purposes instead of dedicated use for improving the assistive technology functionality in a secure environment.

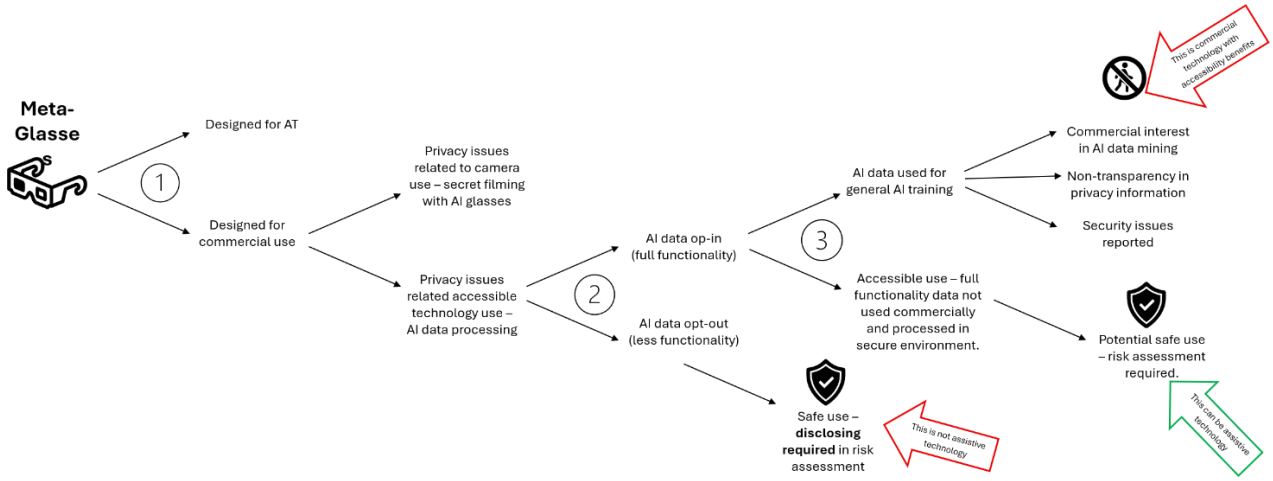


Figure: Flow-chart Assessing Meta-Glasses as assistive technology*: providing a full overview of decision options, where commercial decisions resulted in choosing for commercial uses instead of designing as an assistive technology.*

The consensus as shared in the EDF policy paper[78], is that; the key purpose of assistive technology is to improve the lives of persons with a disability. This does not exclude mainstream commercial products; it does bring additional obligations related to privacy sensitive information which should be handled as protected health information[i]. The *flow-chart Assessing Meta-Glasses as assistive technology* shows: Meta designed Meta-Glasses for commercial use, and the supportive evidence shows accessible tech was a welcome side effect of this design. Technical analysis shows that Meta-Glasses assistive AI features require mobile and internet connection, while assistive technology should be able to function on its own.

Based on the evidence, we conclude that Meta-Glasses, with respect to Assistive Technology, are comparable to the Smartphone, which offers accessibility for users who are blind, but has not been specifically designed for their use. We believe that Meta AI glasses are not assistive tech per se, because they do not contain specific assistive technology features that would class them as Assistive Technology device. This contrasts with glasses from OrCam which have been designed as Assistive technology.

Regarding the obligation of protection of fundamental rights, we believe that the requirement for users to allow their data to be used for AI training to get the full functionality of the glasses, is a clear trade-off between privacy and accessibility.

Finally, we found that Metas choice to use the AI data from disabled users for general training suggest that the company did not intend to provide this technology to improve the lives of persons with disabilities. Meta are promising independence without full clarity on the long-term impact of the user or those being recorded.

We conclude that Meta is exploiting the economic and social vulnerability of the disability community with a commercial product. Disabled people are being used as unpaid and unwitting participants, to collect valuable data that can be used for commercial gain.

[i] Protected health information in the context of assistive technology, refers to privacy sensitive information which is listed in Article 22 of the UN CRPD – equal to health professional coming at home respecting privacy of clients.

Recommendations

Notification & Consent

- **The user and persons being recorded must be informed** that their data is being captured for transfer off device and/or processing by AI. There should also be a clear visible and audible signal. The glasses could also transmit a Bluetooth signal that would alert bystanders that they were being used. Data capture should not be possible when these indicators are disabled through covering or tampering with the sensors or software.
- Persons with disabilities must be informed **in an understandable manner** if they are to be recorded and/or having their data processed by users of AI glasses (a light is no use to someone who is blind, nor a sound to someone who is deaf).
- There must be a **mechanism to obtain consent** before any personal data is processed. This consent **must be recorded**, so that it can be audited.
- Manufacturers, disability groups and regulators should look at **how Assistive Technology can be easily identified** (e.g. like the white cane). This would ensure that users with disabilities can be given exemptions in areas where these glasses are already banned. This would also reduce accusations of being voyeurs, as the glasses currently have the *"Pervert glasses*" association through the actions of bad actors.

Data

Ideally personal data should not leave the device and should only be used for processing. However, there are use cases where the retention of such data may be useful – e.g. Location data for navigation, facial/auditory recognition to identify family and friends etc.

- Manufacturers and service providers must supply a **list of all data collected and inferred** by using the AI glasses. This information should be readily understandable and visible, not hidden under opaque terms of service or on obscure webpage.
- Users and those recorded must be **informed what data is being collected, why it is being collected and how they can object and have it deleted if requested**.
- Users and those recorded must be told what the **role of the Data Controlle**r is and who the applicable Data Controllers are.
- Users should be made aware under what circumstances they are likely to be a Data Controller and what their **responsibilities** are.
- Any personal data should be **anonymised at source**.
- All personal data must be **encrypted at rest, in transit and during processing**.

AI

AI offers great opportunities for assistive technologies to enrich the lives of persons with disabilities.

- **Users should have to opt in** to having their data used for AI training (the current default is that users are automatically opted in). The language used should make it **very clear what data is being used and the purpose of the training**. This permission should require to be **reconfirmed annually**.
- Provision of a **separate AI training data collection option for Assistive AI Features** used for assistive technology services, where the data is not processed with the commercial AI training data.
- Training data for Assistive AI Features for those in the EU should **not be processed outside the EU,** nor be processed by 3rd parties outside the EU unless they meet GDPR requirements.
- Data collected by AI glasses allowed as assistive Technology must **not be used to target and/or steer decisions of users with disabilities** based on the Assistive AI Training Data collected.
- Manufacturers should aim to include as much **AI processing on device**[79] as is practicable (some manufacturers already offer AI processing in this way). This would alleviate many issues such as; privacy, lag and availability without connection to cloud services.

Future Development

- Any manufacturer wishing to develop Assistive Technology such as AI glasses should **consult with the relevant disability organisations and legal accessibility specialists** in addition to meeting legal requirements and applicable standards.
- Battery powered devices should include the provision of "**hot swappable**[80]**" batteries** (some manufacturers already provide this). This would greatly enhance the usefulness of the devices and make them practical for everyday use.
- Look at using spatial[81],[82]
- Using software, adaptive lenses and electronic displays to correct vision, instead of optical lenses.
- All development should include regularly updated formal **Privacy Impact and Data Transfer Assessments.**
- **Industry wide standards should be developed for AI glasses and other AI wearable devices.**

Awareness

- Regulators and manufacturers should **develop and promote public awareness** campaigns to help people identify AI glasses and understand how they work, what types of data they collect and people's rights to object.

Recommendation for oversight bodies

- Given that AI Glasses fall under the AI Act and disability rights are included under the Fundamental Rights Charter in the EU, article 77 of the AI Act applies. This requires **additional oversight by the AI Office, the European Data Protector Supervisor (EDPS), and the European Artificial Intelligence Board**.
- We suggest that AI glasses should be considered as **high-risk AI systems because** they process sensitive personal data.
- We also recommend undertaking a Human Rights analysis based on the UN CRPD covering the rights of persons with disabilities protected under the EU Fundamental Rights Charter in Article 52.
- **Data from assistive technologies** must be referred to as **protected health information and protected under GRPD**, or equal legislation such as HIPAA in the USA.
- Regulators should determine whether devices that market themselves as Assistive Technology should be classed as a medical device and **meet medical device regulations.**

This paper in relation to MDR

Based on our research, we recommend that companies that wish to produce Assistive Technology products that use Artificial Intelligence, carry out a review to ensure:

- Data Privacy: Compliance with data privacy regulations to ensure personal data is handled properly under EU privacy laws (GDPR, AI Act and UNCRPD).
- Human Rights: Confirming the AI respects basic human rights as required by the EU AI Act and the EU Charter of Fundamental Rights.
- Accessibility: Ensuring that persons with disabilities can use the product without discrimination (e.g. being forced to give up privacy).

Companies should apply to register their products as a medical device to help compensate for persons with disabilities under the European Union Medical Device Regulations (EU MDR 2017/745). Following this step-by-step approach helps developers safely build helpful AI accessibility features into mainstream products, ensuring they meet all legal standards to be officially recognized as assistive technologies.

Closing remark on recommendations

We hope that these recommendations offer lawmakers update existing medical device regulations, manufactures of AI glasses and oversight bodies, the opportunity to provide useful assistive technology. Manufacturers who supply devices outside the EU should consult the equivalent legislation. We hope that this research and its recommendations offer responsible authorities the opportunity to assess whether AI driven technologies like AI glasses can be considered as assistive technology.

Conclusion

Designing Assistive Technology into mainstream consumer products will support the disability community and help make such technology more affordable. However, commercial technologies should only be made available as Assistive Technology where they can meet the relevant requirements and laws.

We conclude that Metas current AI glasses and associated architecture, were not designed as Assistive Technology and are fundamentally incompatible with the EU legal framework regarding privacy and provision for persons with disabilities.

We also reject the corporate strategy of offloading compliance responsibilities to persons with disabilities, as many users will not understand their legal responsibilities and may inadvertently break the law.

We believe that Metas choice to process data with AI, without notification or consent from bystanders ignores human rights to privacy and breaches GDPR. Further, that their current AI data processing architecture breaches EU accessibility directives that require devices to be lawful to operate in general use and can be used offline.

We also acknowledge that many in the disability community would welcome assistive technology that does not highlight their disability. This calls for further research to align privacy and disability rights. As the communication around Meta-Glasses showed these interests being conflicting with this type of as-normal-product.

Further work is required to evaluate whether AI glasses and architecture can be redesigned to meet their obligations under EU (and equivalent local) regulations and become an Assistive Technology that would benefit persons with disabilities

Note from the authors and future research

The researchers fully respect that many people with disabilities find AI glasses useful in combatting their disabilities. However, evidence shows that the majority of users and disability organisations do not fully understand:

- how the glasses and services work
- what data is collected, why it is collected and what it is used for
- the applicable laws and responsibilities of the user
- what long-term risks of AI training and modelling entail, both concerning freedom of decision making and personal risks
- the impact of the EU AI Act.

We wish to continue our research from a sociological angle to address the following;

- Do persons with disabilities and their representative organizations have enough technical knowledge/skills to assess the risks of this kind of AI driven features?
- What new features could provide additional functionality to make AI glasses effective Assistive Technology?
- How do we evaluate and educate the disability community and their representatives on the risks associated with potential assistive technology and provide them with tools to carry out their own assessment?

  E.g.

- Facial recognition – tables present in Meta glasses app examined by the Hamburg data commissioner have shown that this code was in place (Name tag feature, now removed[83], but still on the development[84] roadmap for Meta).
- what long-term risks, both concerning freedom of decision making and personal safety, entail and what extra measures must be taken to ensure that assistive technology is safe in a world of 'zero-minutes'[j]
- Eye tracking[85] to understand what the user pays attention to.
- AI inferences, (emotional [86] state, sentiment analysis etc.)
- Influence gained from training personalised AI based on user data and how they best respond to persuasion[87] (emotional, rational etc).

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j Zero-minutes references to unknown security issues in software, hardware, or firmware – which AI can find in minutes instead of the previous required days.

About the authors

Bianca Prins has been working on disability inclusion since 2010 when she entered disability advocacy in The Netherlands. In the period 2015-2025 Bianca was working at ING Bank, of which 9 years as Global Head of Accessibility. She is an international peer-recognized expert in accessibility compliance/policy, equitable AI, and disability rights expert. In this role she has been on international stages and panels discussing accessibility, disability rights, and equitable AI since 2020: www.cvworks.nl/about-bianca-prins

Since 2022 Bianca also has been a member of the International Association of Accessibility Professionals and certified Professional Core Accessibility Competences[k], which is renewed in 2025. As part of her work as accessibility professional, Bianca has published her book: Disability Inclusion = Shared Responsibility (2025) and multiple papers on her company website: www.cvworks.nl/research

Stewart MacInnes has been an IT Project and Program manager for over thirty years. Stewart has set up the development of enterprise-grade reusable AI applications, enabling secure access to Large Language Models (LLMs) like ChatGPT and Claude for over 120,000 users in 86 countries. These projects leveraged AI Vision, NLP, chatbots, machine learning, and digital twin technologies. He also established Centres of Excellence for Robotic Process Automation and conversational AI and was Program manager for Reusable AI at AstraZeneca.

Stewart has worked with privacy teams across the world and carried out many Privacy and Data Transfer Impact Assessments on applications that his teams have developed.

Disclaimer

The findings and critiques presented in this paper are based solely on research and data collected by the authors, including the use of AI glasses including Meta Ray-Ban display. Our evaluation and opinions represent the views of the authors and do not constitute legal advice.

Whilst every effort has been made to ensure the accuracy of the data presented, this information may now be out of date, as this is a fast-moving technology and new features and products are being added every day. Our analysis was based on products available from March to October 2026. Consequently, some of our findings may not be applicable to later models or architectures.

The authors have no personal or financial conflicts of interest and have received no funding for this paper. Readers should exercise their own due diligence and consult official manufacturers documentation before making purchasing or other decisions regarding the products mentioned.

[k] Review certification status via this website: https://www.accessibilityassociation.org/certification-portal/s/certified-professional-directory

Abbreviations and links

Abbreviation	Full name / description
AI	Artificial Intelligence - the science and engineering of making intelligent machines. A broad term for computer systems that can perform tasks with human-like intelligence, such as understanding language, recognizing images, learning from data, reasoning, and making decisions
Accessible Technology	Accessible technology is mainstream technology with features that are designed to be inclusive to those with disabilities. E.g. Screen reader capabilities on web browsers or zoom settings on phones.
Assistive Technology AT	Assistive Technology *"any item, piece of equipment, or product system whether acquired commercially off the shelf, modified, or customised, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities"*[88l]
DSE	Disability Support Europe (previously EASPD) "The leading voice of disability services across Europe. Representing over 20,000 services in over 46 different countries, we promote human rights and equal opportunities for people with disabilities through effective and high-quality support".
EAA	European Accessibility Act
EDF	European Disability Forum an independent non-governmental umbrella association of persons with disabilities that defends the interests of over 100 million persons with disabilities in Europe.
EU	European Union
GDPR	General Data Protection Regulations
RNIB	Royal National Institute for the Blind - charity representing and campaigning for the blind in the UK
UN	United Nations
UN CRPD	United Nations Convention on the Rights of Persons with Disabilities

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