

# White Paper on Accessibility for Developers





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# White paper on accessibility for developers

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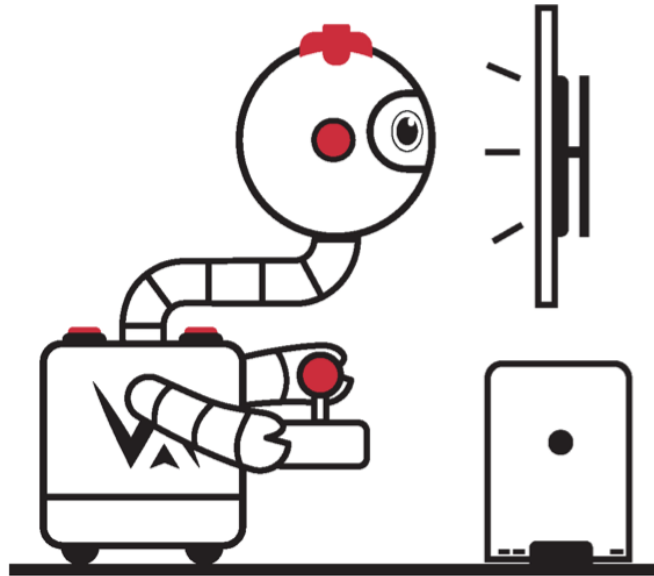
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# Introduction



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Since 2014, accessibility has been emerging in the world of video games, but it was not until the last five years (2018–2023) that the specialised industry has taken the incorporation of guidelines that make its products and services reach more people seriously. Thanks to these guidelines, people with disabilities or other barriers are now also part of the target audience, making the media much more inclusive.

Over these years, accessibility has been explored, understood and applied in different areas of the video game industry, but not until recently, the different players did not even report on the improvements they included in their products or services. For this reason, although the main barrier is meant to be understanding and developing accessibility parameters at a technical level, in many cases the main obstacle was the lack of dissemination by large companies, which did not provide any information about the accessibility guidelines they included in their products.

The key question is what the best practices to increase the level of accessibility in the development of a video game are. To begin with, accessibility and disability inclusion needs to be considered in an organic way from the early stages of development, i.e. from the initial concept, analysis and design of the game itself. This will greatly benefit development in terms of economic costs and staff effort. If, on the contrary, accessibility is considered at the coding stage, or even when the product is almost finished, the increase in time and money to be invested would be significant.

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Today, there are developers at large studios who belong to departments focused on user experience (UX), where it is fortunately becoming increasingly common to hire people with disabilities so that they can highlight their own needs, being part of the development of main AAA games. In other cases, in more modest situations, there are developers who make every effort to promote accessibility in the video games they are creating, to offer their product to as many people as possible. This paper is aimed at all of them, whether they belong to large or small studios.

The purpose of this document is to reveal the information related to accessibility when playing a video game, considering the current shortcomings in this field. In other words, the following pages aim to answer questions such as: what does a blind person need to play video games? Is it difficult to implement co-pilot mode? Are all accessibility implementations equally necessary?

## **Objectives**

The main objectives that have led to the writing of this white paper by the Spanish Video Game Association and the ONCE Foundation were:

- Raise society's awareness about accessibility/disability.
- Provide a reference on accessibility guidelines in video games.

- Correctly relate the functional provision profiles with their accessibility guidelines.
- Explain how accessibility guidelines can be developed.
- Identify the difficulties studios face in implementing accessibility guidelines.
- Provide video game developers with tools to assess their products' accessibility themselves.
- Make information on hardware accessibility and peripherals available.
- Discuss the importance of 3D printing in hardware and adapted peripherals.

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# Context and Regulations

In July 2022, the web portal **‘Ga11y: Accessible video games’** was officially published. It includes a catalogue to assess the accessibility level of video games for different platforms and functional provisioning profiles.

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Previously, there had been websites where people with disabilities published accessibility reviews based on their own criteria, considering very different profiles and not based on any analytical standards. To provide a more objective and replicable alternative, which would not be directly related to the personal opinion of the evaluator or whose result would simply be reduced to a numerical score, a more standardised option was proposed. Video games are not judged better or worse because they include more or less accessibility options; that depends to a large extent on how they adapt their identity and design to customise factors that allow a wide array of users to play comfortably and efficiently, whoever they may be.

To create the methodology on which the evaluation of video games and this white paper are based, which includes an explanation of how to develop various accessibility guidelines, the European standard EN 301549, titled ‘Accessibility requirements for ICT products and services’, have been taken into consideration.

This standard specifies the functional accessibility requirements applicable to products and services incorporating ICT, and a description of the test procedures and evaluation methodology for each accessibility requirement. In this particular case, the aim is to develop a methodology to guide the evaluation and creation of accessible video games.



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One thing that should be clarified about the standard is that it changes depending on whether the product has closed or open functionality::

- **Closed functionality:** limited by features that prevent a user from being able to attach, install or use assistive devices.
- **Open functionality:** compatible with assistive devices.

By that measure, consoles from PlayStation, Xbox or Nintendo are considered to have closed functionality because no additional SW components can be installed inside the console (the assistive devices or accessibility settings in the game/console itself must be used). On PCs and mobile devices (Android and iOS), however, the functionality is open, and mods<sup>[1]</sup> and assistive devices that are not included as standard can be installed.

The functional profiles discussed in the standard and in this paper do not refer to a disability per se but to how the technology is used, regardless of whether or not a person has a disability. These profiles are:

- **Usage without vision:** Where ICT provides visual modes of operation, the ICT provides at least one mode of operation that does not require vision.

- **Usage with limited vision:** Where ICT provides visual modes of operation, the ICT provides features that enable users to make better use of their limited vision.

- **Usage without perception of colour:** Where ICT provides visual modes of operation, the ICT provides a visual mode of operation that does not require user perception of colour.

- **Usage without hearing:** Where ICT provides auditory modes of operation, the ICT provides at least one mode of operation that does not require hearing

- **Usage with limited hearing:** Where ICT provides auditory modes of operation, the ICT provides enhanced audio features.

- **Usage with no or limited vocal capability:** Where ICT requires vocal input from users, the ICT provides at least one mode of operation that does not require them to generate vocal output.

- **Usage with limited manipulation or strength:** Where ICT requires manual actions, the ICT provides features that enable users to make use of the ICT through alternative actions not requiring manipulation, simultaneous action or hand strength.

- **Usage with limited reach:** Where ICT products are free-standing or installed, all the elements required for operation will need to be within reach of all users.

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<sup>[1]</sup> **Mods:** In video games, a mod (short for modification) is a software extension that modifies an original video game by offering new possibilities, settings, characters, dialogues, objects, maps, etc. Almost all major PC video games today incorporate tools and manuals to modifying them to the player's liking.

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- **Minimize photosensitivity seizure triggers:** Where ICT provides visual modes of operation, the ICT provides at least one mode of operation that minimizes the potential for triggering photosensitive seizures.
  - **Usage with limited cognition, language or learning:** The ICT provides features and/or presentation that makes it simpler and easier to understand, operate and use.

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**NOTE:** The standard referenced (**EN 301549**) has been used for the video game evaluation methodology and for the explanation of all accessibility guidelines in this developer accessibility white paper.

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# Institutional Letters



## **AEVI**

**José María Moreno. Secretary General of AEVI (Spanish Video Game Association).**

Video games are one of the most-loved recreational options for people of all ages. More than 18 million people today use video games on a regular basis in our country. They are also a gateway to culture, a way to socialise, a wonderful educational tool and, increasingly, a valuable resource used in the field of medicine and healthcare.

Currently, about three billion people around the world play video games. It is estimated that nearly 400 million of them have some kind of disability.

The sector believes that we need to and must work towards universal accessibility and the inclusion of people with disabilities in the field of video games, both as players and professionals.

This passion for accessibility has grown exponentially among manufacturers, developers and players in recent years, and together we have managed to ensure that more and more people with disabilities can be part of this world and enjoy the benefits of video games: entertainment, socialising, access to culture, etc.

With the publication of the White Paper on Accessibility, a result of the collaboration between

the ONCE Foundation and AEVI, a significant step has been taken towards the goal of equality and inclusion. At AEVI, we prioritise this objective and are delighted to work hand in hand with the ONCE Foundation and its Ga11y project to achieve it.

This white paper arises from the need to establish clear and practical guidelines to ensure that video games are accessible to everyone, regardless of their physical, sensory or cognitive abilities. Video game companies are increasingly committed to making hardware and video games more inclusive from the moment they are initially designed and are advancing accessibility by incorporating features, devices and accessories that enable full enjoyment of the games.

We aim for this publication to become the standard document for game developers and studios seeking to enhance the accessibility of their titles. It will serve as a comprehensive resource, addressing any questions they may have regarding guidelines that benefit people with disabilities. It also provides detailed instructions on how to implement the guidelines from a technical perspective.

Many of the proposals allow any player to customise the game to their needs and tastes. By implementing them, we are promoting inclusion and opening doors to new perspectives and ways of playing.

We would like to highlight that at AEVI we have promoted initiatives such as PlayEquall, one of the most relevant multimedia content projects in the sector at a global level, where we disseminate the principles of equality, diversity and promote accessibility within the video game ecosystem, and The Good Gamer, to vindicate the benefits and very best values of video games and promote their responsible use.

We are convinced that video games should be a tool to tear down barriers in society and fight against stigmas. We will continue working to raise awareness in society about the full equality of people with disabilities and among industry agents about the need to incorporate universal accessibility criteria and design for all, providing guidance and promoting positive change in the industry.

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# Institutional Letters



## ONCE Foundation

José Luis Martínez Donoso  
Director General of the ONCE Foundation

For the last four years, the ONCE Foundation team has been committed to promoting equal opportunities in the video game industry, as we have the duty to promote inclusive recreation so that the whole of society, including people with disabilities, can enjoy video games, an industry whose size currently exceeds music and film combined. And it is time for accessibility to be conceived as something that benefits us all.

Our project Ga11y: (pronounced Galy) Accessible Video Games, has sought to address the industry's stated need for information about training and jobs, console and video game accessibility, the most competitive part with esports and of course the part of public education. We have participated in events and created inclusive video game camps to make sure that everyone knows about these needs and how accessibility supports and makes it easier in many cases for people with disabilities to immerse themselves in the different video games worlds.

We are very pleased to be able to publish this 'White Paper on Accessibility for Developers' with the Spanish Video Game Association so that all the agents involved in the creation of these products –analysts, designers, developers, testers, scriptwriters, marketing and advertising, among other professions and departments– can take into account the guidelines that ensure that video games have the minimum accessibility so that the greatest number of people can enjoy this ecosystem.

We hope that this document will serve as a standard for large companies as well as for indie studios that, with fewer resources and personnel, are doing a great job in the industry. Likewise, the ONCE Foundation team will continue to be available to answer any questions that may come up at studios and from individuals through our Ga11y: Accessible video games project's web platform.

Best regards.





# Accessibility guidelines

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**1 star**

(28 guidelines)

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2 stars

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3 stars

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4 stars

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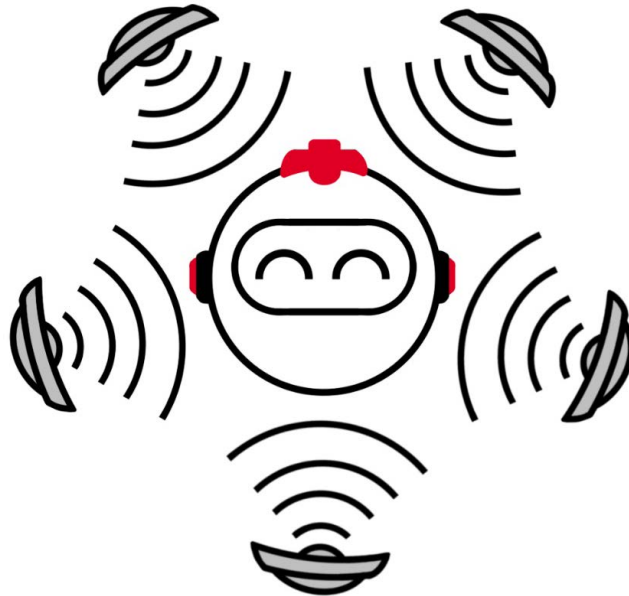
5 stars

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# 01 3D audio

Accessibility guidelines  
1 star



Name of the accessibility guideline

3D audio

Description of the guideline

Activates sound effects that manipulate the sound coming out of stereo speakers, surround speakers, speaker arrays or headphones. This is achieved by positioning sound sources virtually anywhere in three-dimensional space, either behind, above or below the listener.

Profiles it applies to

Without vision (**mandatory**), Limited vision and Limited hearing.

Difficulty of implementation

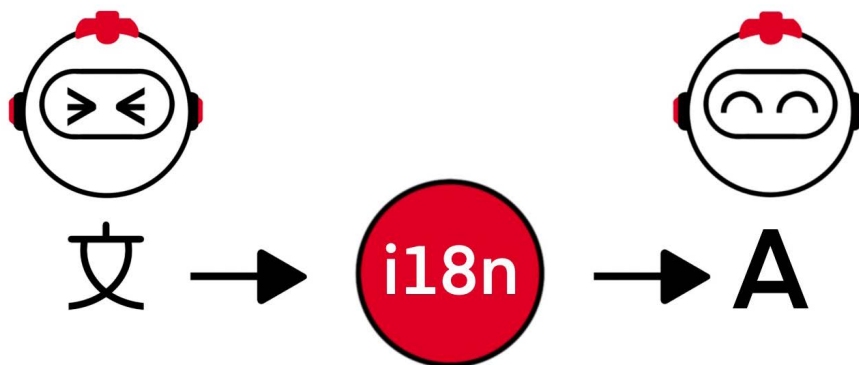


How should it be implemented?

The vast majority of graphics engines already have 3D sound, the sound sources just need to be precisely located on the map, so that the place each sound is coming from corresponds as closely as possible to the sound's emitter.

## 02 Translation warnings

Accessibility guidelines  
1 star



Name of the accessibility guideline	Translation warnings
Description of the guideline	When there are texts in the video game world's language, it alerts you or translates them into Spanish.
Profiles it applies to	Limited cognition, language or learning.
Difficulty of implementation	★
How should it be implemented?	Locating all the texts in the video game, clearly marking when a merely cosmetic invented language is used (using another font, italics, symbols, etc.).



# 03 Turn off tinnitus sounds

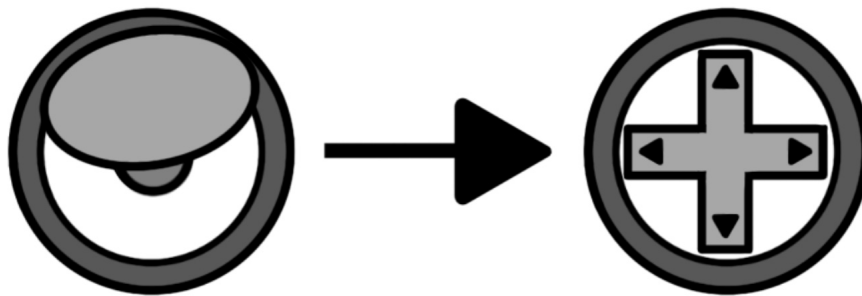
Accessibility guidelines  
1 star



Name of the accessibility guideline	Turn off tinnitus sounds
Description of the guideline	Turns off video game sounds that are ringing, buzzing, whistling, low or high pitched noises heard for a short time or over and over again.
Profiles it applies to	Limited hearing.
Difficulty of implementation	★
How should it be implemented?	Organising the sound media library to be able to disable certain types of sound in the audio options. Then players can deactivate any that conflict with his/her usage profile. Sounds that are tinnitus in your game should be identifiable and the user should be able to disable them. A variable can be created to identify those audio files.

# 04 D-pad

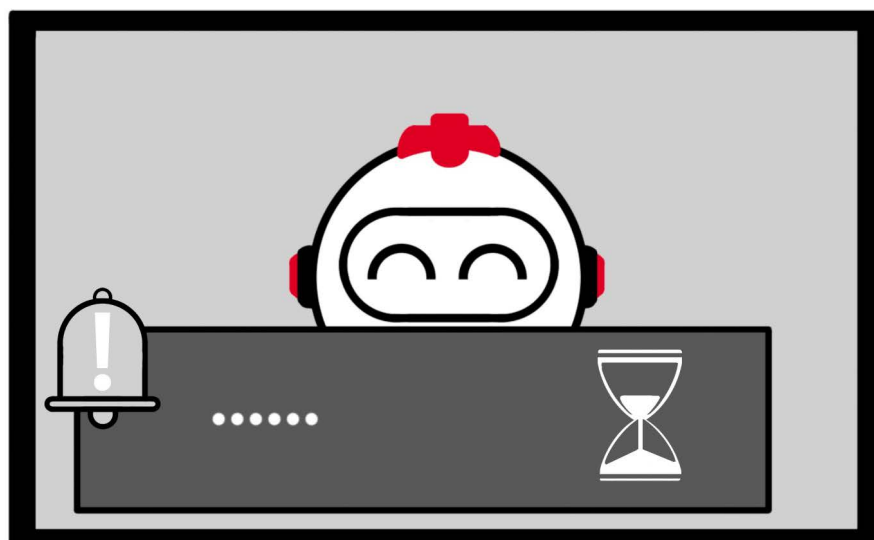
Accessibility guidelines  
**1 star**



Name of the accessibility guideline	D-pad
Description of the guideline	Allows moving with the controller or the direction buttons instead of the joystick.
Profiles it applies to	Moderate limitation in manipulation or strength.
Difficulty of implementation	★
How should it be implemented?	Taking into account the possible use of the controllers(s) from the early stages of development, considering it an alternative when documenting the GDD for later implementation.

# 05 Notification duration

Accessibility guidelines  
**1 star**



Name of the accessibility guideline

Notification duration

Description of the guideline

Customise how long a notification is displayed.

Profiles it applies to

Without vision, Limited vision, Without hearing, Limited hearing.

Difficulty of implementation

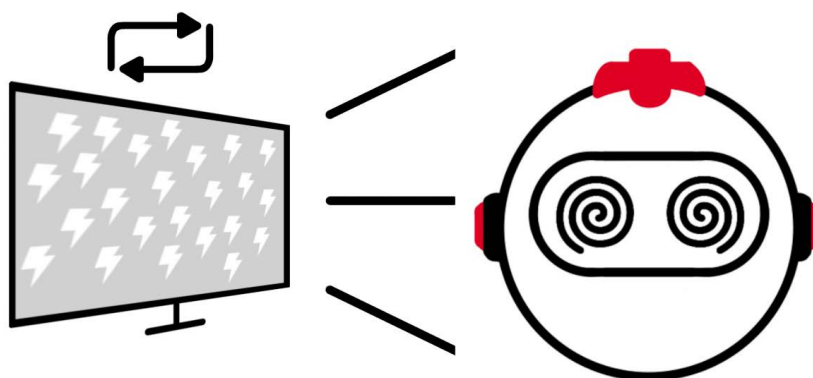


How should it be implemented?

If implemented from the beginning, the development cost is very low. You only need to be able to change this notification's duration from the options menu.

## 06 Repeating effects

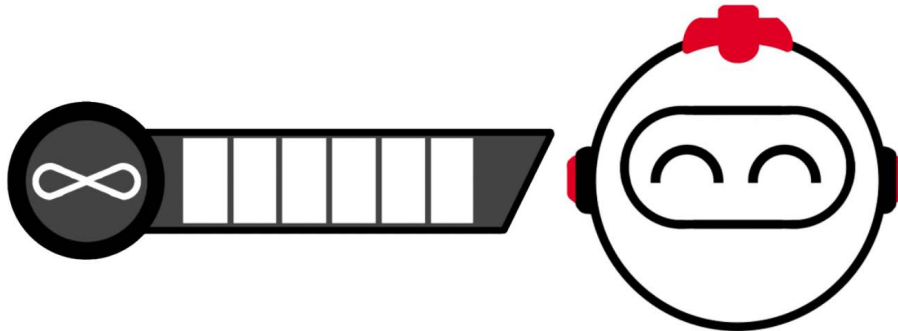
Accessibility guidelines  
1 star



Name of the accessibility guideline	Repeating effects
Description of the guideline	Activates or deactivates repetitive effects like lightning and strobe lights.
Profiles it applies to	Without vision, Limited vision, Without hearing, Limited hearing, Severe limitation in manipulation or strength, Moderate limitation in manipulation or strength, Limited cognition, language or learning, Without perception of colour and Limited vocal capability.
Difficulty of implementation	★
How should it be implemented?	Similar to sounds in the case of tinnitus, conflictive effects should be identified by code so that they can then be easily (de)activated with an option in the game's accessibility menu.

# 07 Stamina

Accessibility guidelines  
**1 star**



Name of the accessibility guideline

Stamina

Description of the guideline

Some elements of the game where infinite mode can be activated or deactivated. Bullets, life, breathing, etc., depending on the context, making it easier to interact with the game.

Profiles it applies to

Without vision, Severe limitation in manipulation or strength (**mandatory**), Moderate limitation in manipulation or strength and Limited cognition, language or learning.

Difficulty of implementation



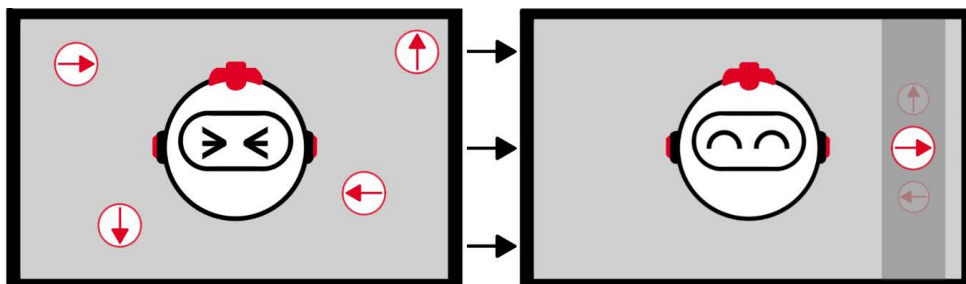
How should it be implemented?

Consumable items must be modifiable, so that the variable that manages them decreases or not, depending on whether their infinite mode is enabled in options.



# 08 Events in kinematics

Accessibility guidelines  
1 star



Name of the accessibility guideline

Events in kinematics

Description of the guideline

In events in which a sequence of buttons with interactive kinematics have to be pressed, the options should appear in the same area of the screen so the user doesn't have to look around for them every time a different button is pressed.

Profiles it applies to

Limited vision.

Difficulty of implementation

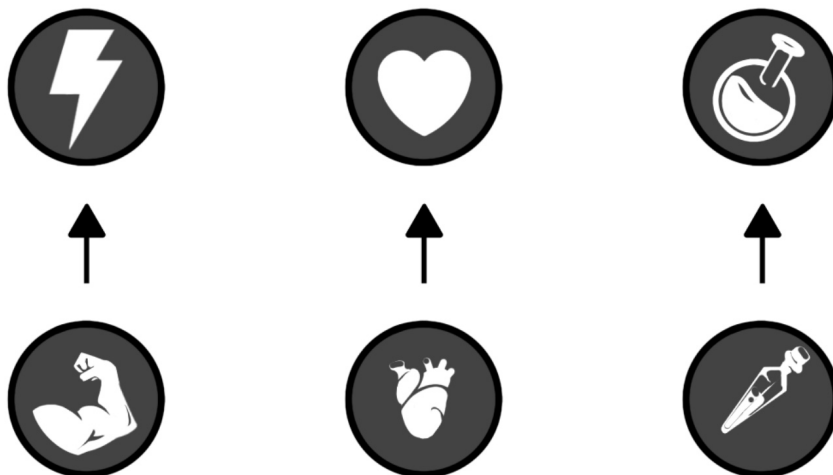


How should it be implemented?

These sequences should be designed appropriately, taking into account where the indications are on the screen.

# 09 Representative icons

Accessibility guidelines  
**1 star**



Name of the accessibility guideline

Representative icons

Description of the guideline

The icons that are included next to the texts are self-evidently related to their references (backpack, lives, etc.).

Profiles it applies to

Limited vision and Limited cognition, language or learning.

Difficulty of implementation

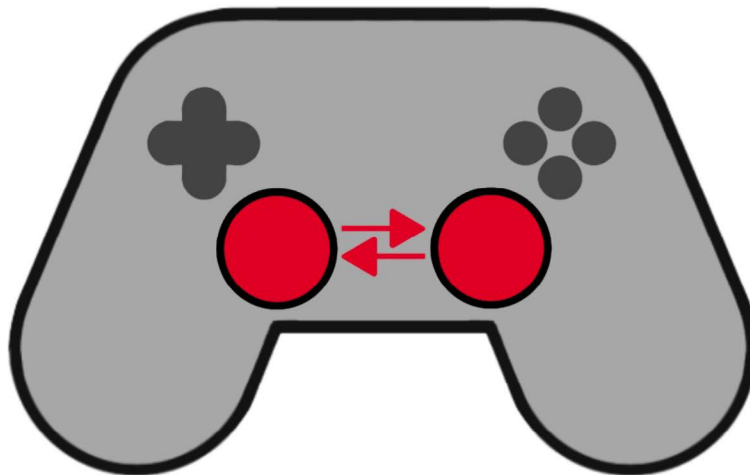


How should it be implemented?

Select/design the icons at the start of production and include them later in those texts or elements that require them.

# 10 Joystick switch

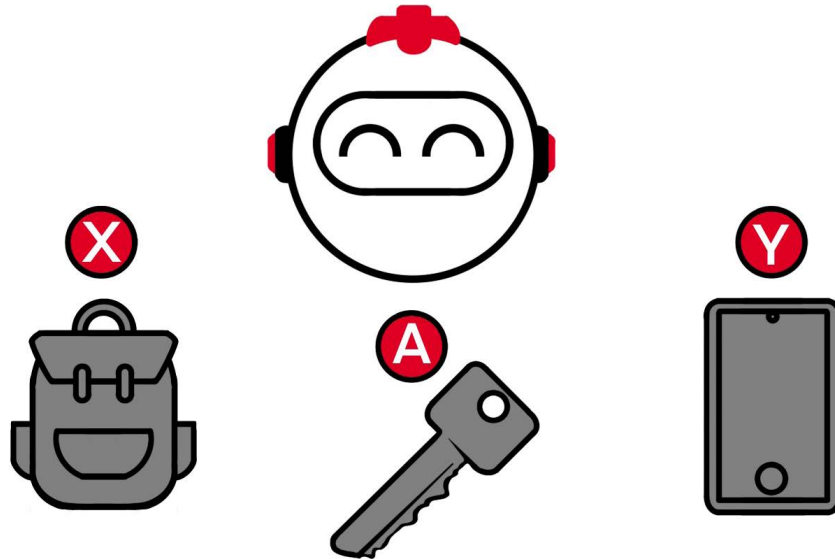
Accessibility guidelines  
**1 star**



Name of the accessibility guideline	Joystick switch
Description of the guideline	Swaps the functionality of the left and right joysticks.
Profiles it applies to	Severe limitation in manipulation or strength and Moderate limitation in manipulation or strength.
Difficulty of implementation	★
How should it be implemented?	Take this guideline into account when coding in the controls, so that they can be customised by the users as needed.

# 11 Action marker

Accessibility guidelines  
**1 star**



Name of the accessibility guideline

Action marker

Description of the guideline

Shows the buttons or the way to perform a function or action within the video game.

Profiles it applies to

Limited cognition, language or learning.

Difficulty of implementation



How should it be implemented?

Roll out all possible actions with an associated iconography that is representative enough.

# 12 Sound mixing

Accessibility guidelines  
**1 star**



Name of the accessibility guideline

Sound mixing

Description of the guideline

Being able to customise aspects of the sound in mono, stereo or other mix settings.

Profiles it applies to

Limited hearing **(mandatory)**.

Difficulty of implementation



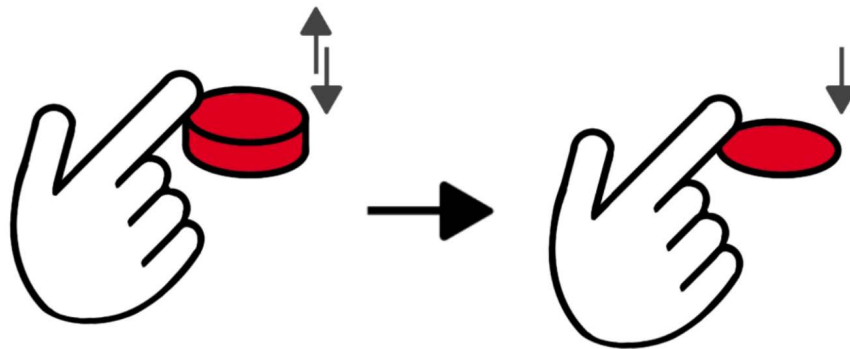
How should it be implemented?

The product should be able to be configured (in the audio options menu) to be used with a single channel (mono), two channels (stereo) or surround sound (multi-channel). The player should also be able to adjust sound quality.



# 13 Modifiers

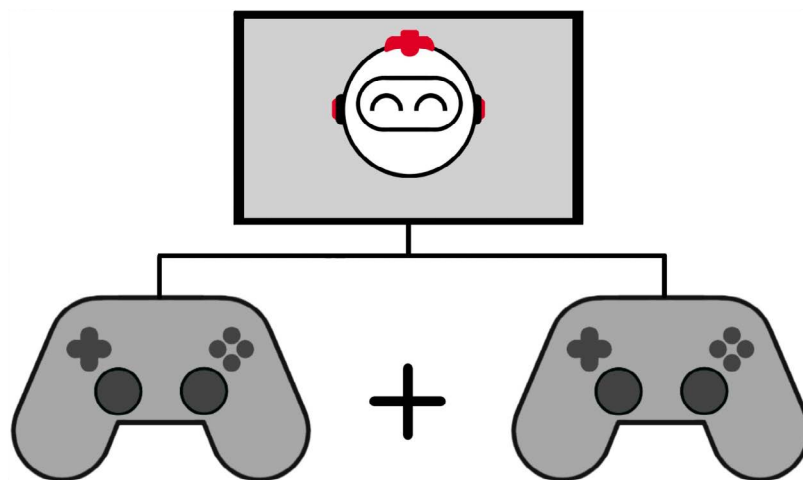
Accessibility guidelines  
**1 star**



Name of the accessibility guideline	Modifiers
Description of the guideline	The video game allows users to change their interaction with the buttons within the video game’s mechanics, i.e., repeated press, press and hold or toggle (press once to activate and press again to deactivate). The possibilities of repeated press, hold or toggle may vary from game to game or mechanic to mechanic.
Profiles it applies to	Severe limitation in manipulation or strength ( <b>mandatory</b> ) and Moderate limitation in manipulation or strength ( <b>mandatory</b> ).
Difficulty of implementation	★
How should it be implemented?	The possibility of the different interaction modes (repeated press, press and hold or toggle mode) should be available for all actions that require it from the design phase of the game’s mechanics.

# 14 Co-pilot mode

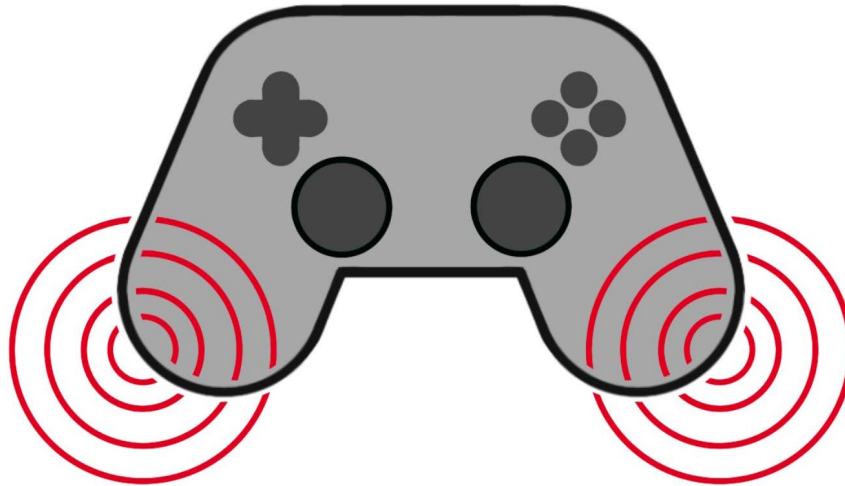
Accessibility guidelines  
1 star



Name of the accessibility guideline	Co-pilot mode
Description of the guideline	Letting another person with a different controller, mouse or keyboard play the same video game to split tasks or support the person who needs it. <b>NOTE:</b> This is not a cooperative mode; it is the ability to play single-player video games with two devices at the same time.
Profiles it applies to	Without vision, Limited vision, Severe limitation in manipulation or strength ( <b>mandatory</b> ), Moderate limitation in manipulation or strength, and Limited cognition, language or learning.
Difficulty of implementation	★
How should it be implemented?	The product has to be implemented taking into account that a second complementary control can be used, which will mirror the first. The first device performs its actions + those completed by the second device (both working as controllers simultaneously).

# 15 Haptic notifications

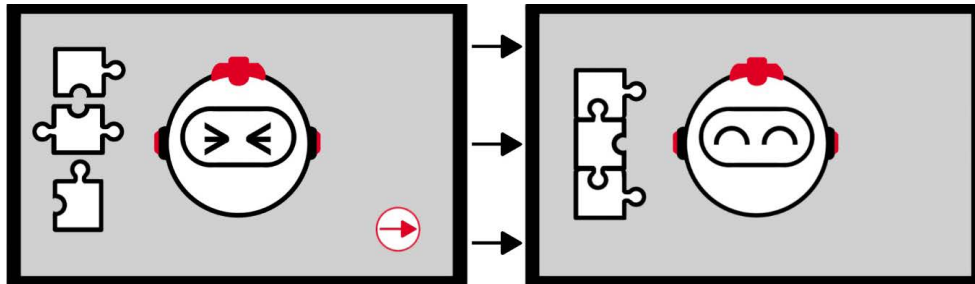
Accessibility guidelines  
**1 star**



Name of the accessibility guideline	Haptic notifications
Description of the guideline	Notifications complementary to sounds, warnings, notifications or visual information through controller vibration.
Profiles it applies to	Without vision ( <b>mandatory</b> ), Limited vision, Without hearing ( <b>mandatory</b> ), Limited hearing.
Difficulty of implementation	★
How should it be implemented?	Haptic notifications are very simple to implement if taken into account from day 1 of development. Variables such as intensity, rhythm and duration of vibration should be modifiable, to allow for flexible representations of the sounds, prompts or notifications you see in the game.

# 16 Omitting mechanics

Accessibility guidelines  
**1 star**



Name of the accessibility guideline

Omitting mechanics

Description of the guideline

When the video game has mechanics that can be skipped, generally puzzles, you can click on the 'Skip...' button to solve them automatically and continue seamlessly. If the main mechanic is based on puzzles, this guideline wouldn't make sense and wouldn't be accessible for the indicated profiles.

Profiles it applies to

Without vision (**mandatory**), Limited vision and Limited cognition, language or learning (**mandatory**).

Difficulty of implementation

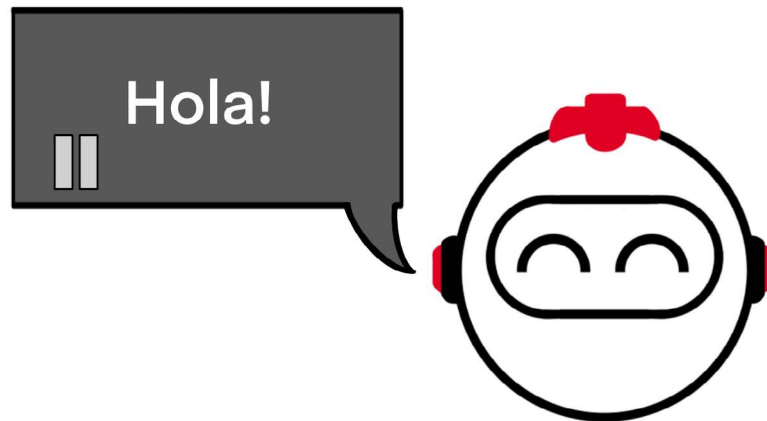


How should it be implemented?

Create an assistance system that allows the user to solve puzzles or skip complex parts of the game. This guideline can be simple to implement (going directly to the next scene with a skip button) or more or less complex (automatically and visibly solving that puzzle or section). Please note that this may not be feasible if the game has a very high puzzle load or difficult sections.

# 17 Pausing verbalised messages

Accessibility guidelines  
**1 star**



Name of the accessibility guideline	Pausing verbalised messages
Description of the guideline	The video game allows you to pause verbalised messages. For this criterion the user must be using a screen reader.
Profiles it applies to	Without vision.
Difficulty of implementation	★
How should it be implemented?	Directly linked to the ‘Screen reader’ guideline. If the user has this assistive technology activated, users must be allowed to temporarily pause the message verbalising the contents offered on the screen (e.g. through a gesture on the touch panel of the controller or by pressing a specific button). This should be taken into account from the start of development.

# 18 Auditory accessibility pre-settings

Accessibility guidelines  
1 star



••••

- Subtítulos
- Lector de pantalla
- Tamaño de letra
- Volúmenes

••••

Name of the accessibility guideline	Auditory accessibility pre-settings
Description of the guideline	Includes an automatic activation of all accessibility features that refer to the hearing profile.
Profiles it applies to	Without hearing, Limited hearing.
Difficulty of implementation	★
How should it be implemented?	Automatic settings which activate the guidelines for hearing impaired users (audio levels, subtitles, etc.) must be prepared.

# 19 Physical or motor accessibility pre-settings

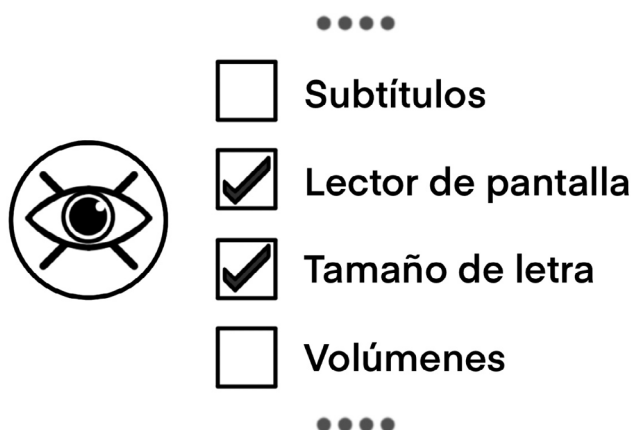
Accessibility guidelines  
1 star



Name of the accessibility guideline	Physical or motor accessibility pre-settings
Description of the guideline	Includes an automatic activation of all accessibility guidelines that refer to the physical/motor profile.
Profiles it applies to	Severe limitation in manipulation or strength and Moderate limitation in manipulation or strength.
Difficulty of implementation	★
How should it be implemented?	Automatic settings which activate guidelines for users with physical disabilities (button remapping, joystick switching, toggle mode, etc.) must be prepared.

# 20 Visual accessibility pre-settings

Accessibility guidelines  
1 star

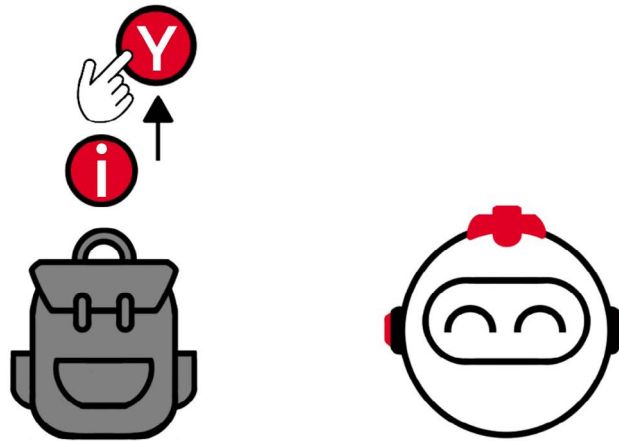


Name of the accessibility guideline	Visual accessibility pre-settings
Description of the guideline	Includes an automatic activation of all accessibility features that refer to the visual profile.
Profiles it applies to	Without vision and Limited vision.
Difficulty of implementation	★
How should it be implemented?	Automatic settings which activate guidelines for visually impaired users (colour palette settings, disable graphics processing, high contrast, etc.) must be prepared.



# 21 Contextual reminders

Accessibility guidelines  
**1 star**



Name of the accessibility guideline

Contextual reminders

Description of the guideline

Messages will appear to remind the user how to use skills, weapons and other resources.

Profiles it applies to

Limited cognition, language or learning **(mandatory)** and Without perception of colour.

Difficulty of implementation

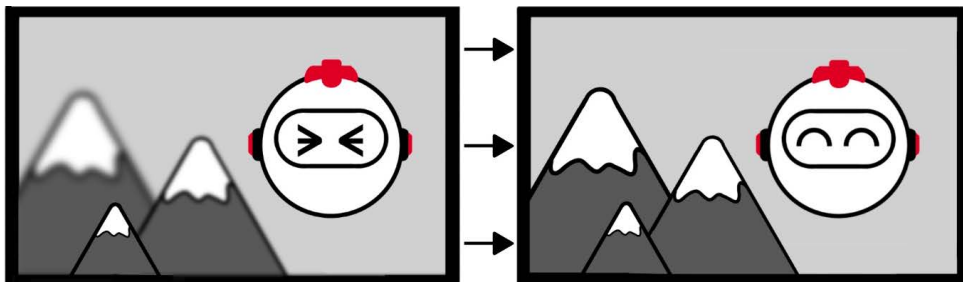


How should it be implemented?

Implement reminders at the start of mechanics (technical script should be updated). This should be done in a non-intrusive way, to avoid overwhelming the player (for example, with an 'i' symbol at given moments, which only shows the reminders if a specific button is pressed).

## 22 Blur reduction

Accessibility guidelines  
**1 star**



Name of the accessibility guideline

Reducción de desenfoques

Description of the guideline

Reduces or eliminates blurring in the game.

Profiles it applies to

Limited vision (**mandatory**).

Difficulty of implementation

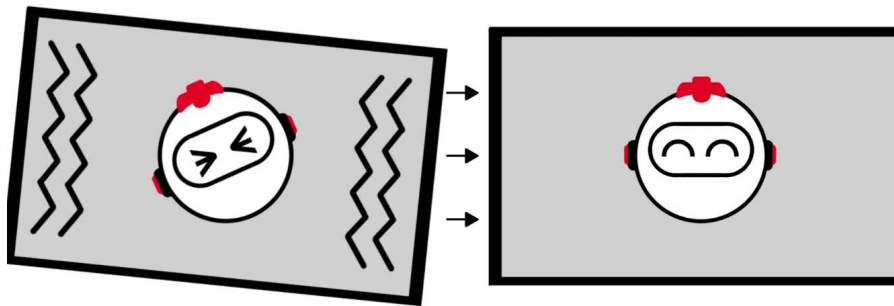


How should it be implemented?

Mechanisms must be included to remove, disable or reduce these effects by code (closely related to post-processing aspects).

# 23 Camera shake reduction

Accessibility guidelines  
**1 star**



Name of the accessibility guideline

Camera shake reduction

Description of the guideline

Reduces or ends camera shake to eliminate possible player motion sickness.

Profiles it applies to

Limited vision (**mandatory**).

Difficulty of implementation

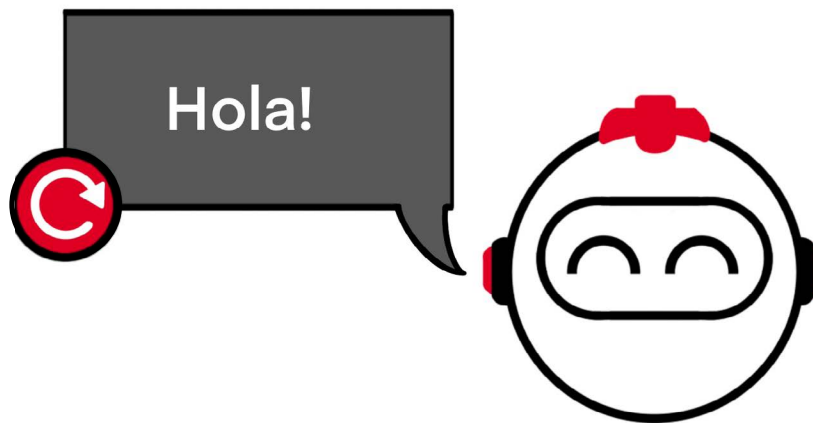


How should it be implemented?

Mechanisms to remove, disable or reduce these effects must be included by code (closely related to camera management).

# 24 Repeat last message

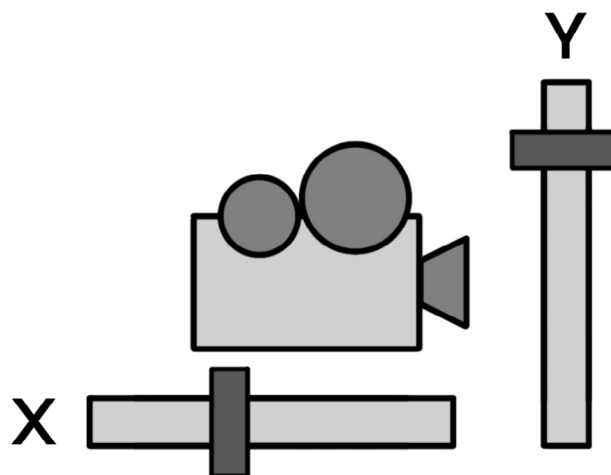
Accessibility guidelines  
1 star



Name of the accessibility guideline	Repeat last message
Description of the guideline	The video game allows the repetition of the last spoken message when its information is essential to play the game. For this criterion the user must be using a screen reader.
Profiles it applies to	Without vision.
Difficulty of implementation	★
How should it be implemented?	Directly linked to the 'Screen reader' guideline. One possible solution is to enable a button to retrieve the last sentence or to include controls to move backwards/ forwards in the dialogue as it is read by the screen reader.

# 25 Motion and camera sensitivity

Accessibility guidelines  
**1 star**



Name of the accessibility guideline

Motion and camera sensitivity

Description of the guideline

Adjusts the sensitivity of the X and Y axis of the camera or the left joystick.

Profiles it applies to

Severe limitation in manipulation or strength **(mandatory)** and Moderate limitation in manipulation or strength.

Difficulty of implementation

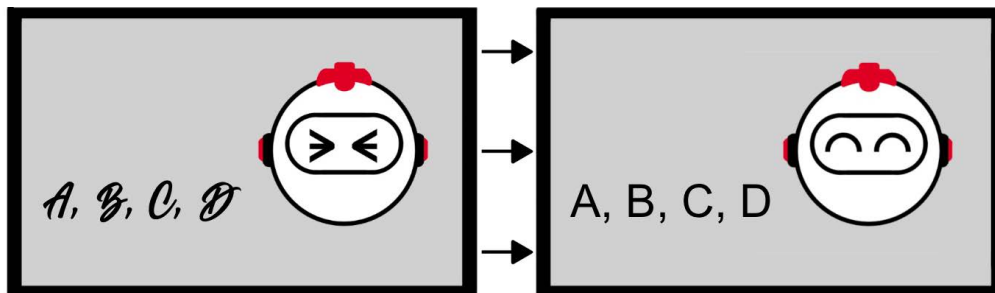


How should it be implemented?

In the options menu, enable adjustments to camera sensitivity or movement of the X and Y axes.

## 26 Alternative easy-to-read font

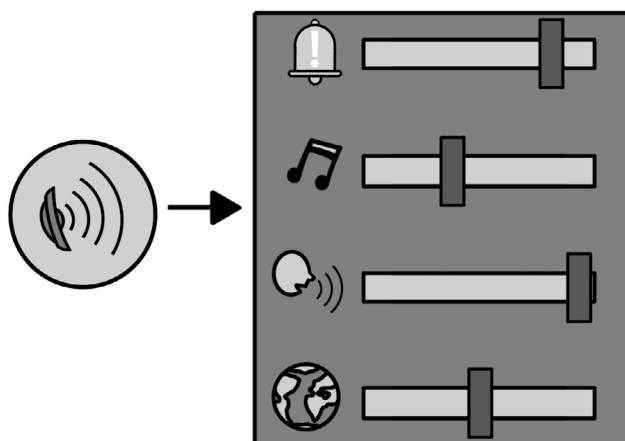
Accessibility guidelines  
1 star



Name of the accessibility guideline	Alternative easy-to-read font
Description of the guideline	Possibility of activating alternative fonts that are easy to read for, for example, people with dyslexia.
Profiles it applies to	Limited cognition, language or learning.
Difficulty of implementation	★
How should it be implemented?	Choose more accessible fonts, such as Arial, Calibri or Verdana. A good rule of thumb is to use any that are sans serif.

# 27 Volume

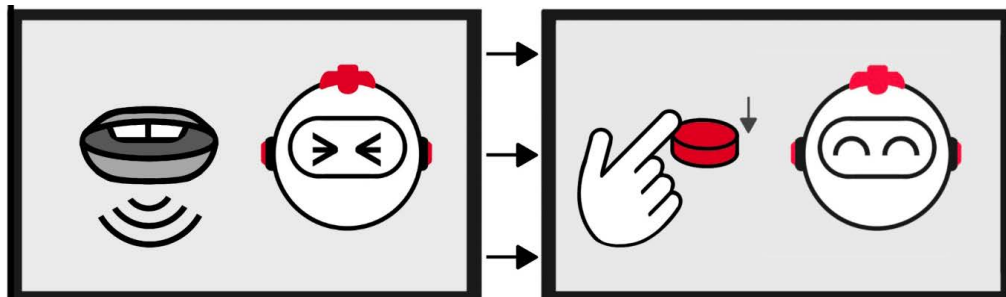
Accessibility guidelines  
**1 star**



Name of the accessibility guideline	Volume
Description of the guideline	Being able to adjust the volume of different elements of the video game such as music, effects or voices.
Profiles it applies to	Without vision ( <b>mandatory</b> ), Limited vision and Limited hearing.
Difficulty of implementation	★
How should it be implemented?	The different types of sounds in the game (music, effects, voices, etc.) should be categorised, so their volume can be configured later independently (in audio options).

# 28 Not dependent on voice interaction

Accessibility guidelines  
**1 star**



Name of the accessibility guideline	Not dependent on voice interaction
Description of the guideline	The video game does not present any functionality where voice, or speech, has to be used.
Profiles it applies to	Limited vocal capability ( <b>mandatory</b> ).
Difficulty of implementation	★
How should it be implemented?	Provide a game experience that does not require any voice interaction. If this is not possible, design mechanics to be able to perform the same functions in a different way.



# Accessibility guidelines

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1 star

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**2 stars**

**(18 guidelines)**

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3 stars

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4 stars

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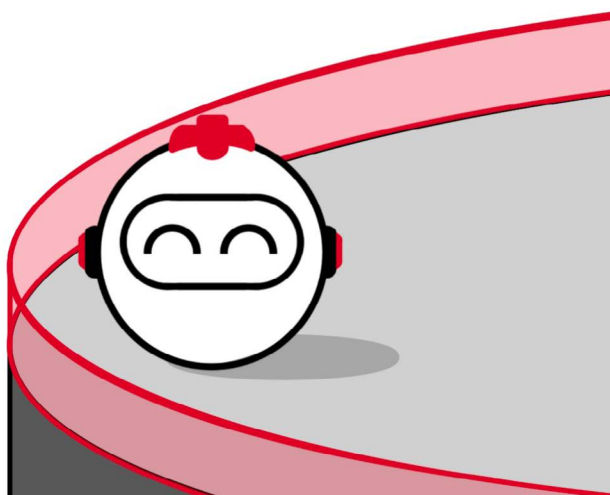
5 stars

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# 29 Fall arrest

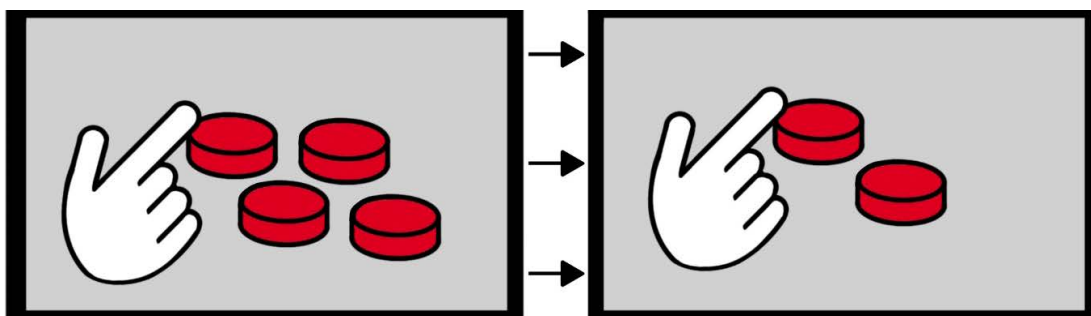
Accessibility guidelines  
**2 star**



Name of the accessibility guideline	Fall arrest
Description of the guideline	Prevents you from falling or falling off the screen depending on the type of game.
Profiles it applies to	Without vision ( <b>mandatory</b> ), Severe limitation in manipulation or strength ( <b>mandatory</b> ) and Moderate limitation in manipulation or strength.
Difficulty of implementation	★★
How should it be implemented?	Optional colliders/walls should be incorporated into the level design, which if the player activates them would prevent the player from falling. The complexity will depend on the size and shape of the levels.

# 30 Shortcuts

Accessibility guidelines  
2 star



Name of the accessibility guideline

Atajos

Description of the guideline

Allows simplifying some actions within the game with shortcuts.

Profiles it applies to

Severe limitation in manipulation or strength (**mandatory**), Moderate limitation in manipulation or strength and limited cognition, language or learning.

Difficulty of implementation

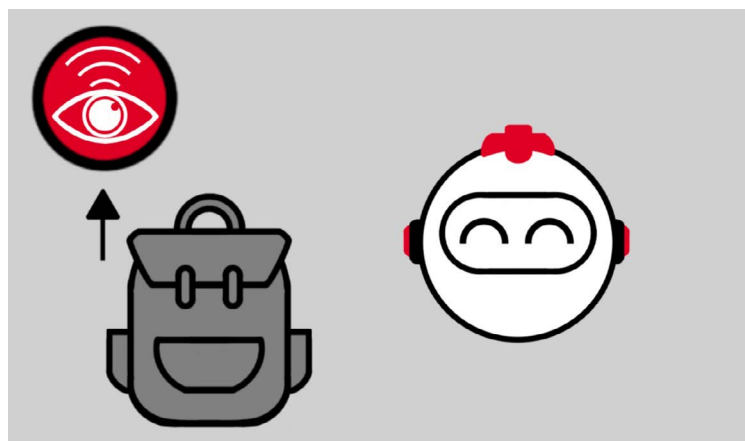


How should it be implemented?

A system of shortcuts has to be created to perform combinations of actions and attacks (pre-designed by the studio).

# 31 Audio description

Accessibility guidelines  
**2 star**



Name of the accessibility guideline

Audio description

Description of the guideline

Add descriptions, at least in cinematics, or when performing actions during the game. If the game does not tell some users what is happening, they may not experience the game.

Profiles it applies to

Without vision (**mandatory**).

Difficulty of implementation

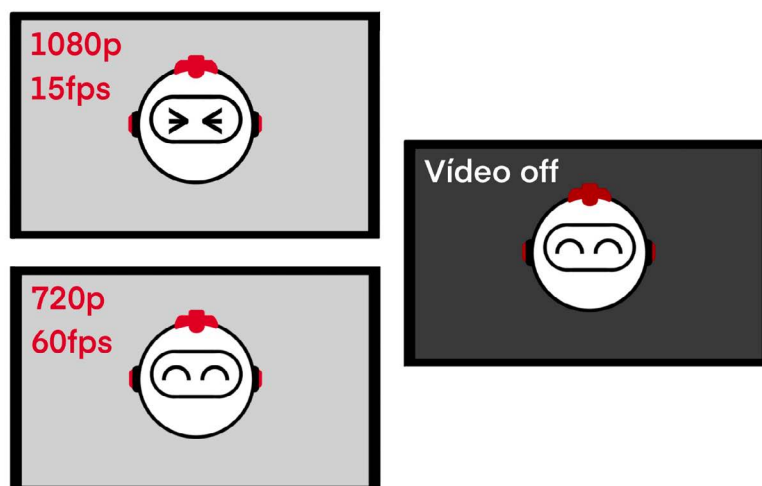


How should it be implemented?

In technical terms, this is about including more detailed subtitling. If the additional description is provided in textual form, it will be less work than if the description includes audio, which will cost more.

# 32 Disable graphics processing

Accessibility guidelines  
2 star



Name of the accessibility guideline

Disable graphics processing

Description of the guideline

Allows disabling graphics processing to decrease console performance to save energy.

Profiles it applies to

Without vision.

Difficulty of implementation

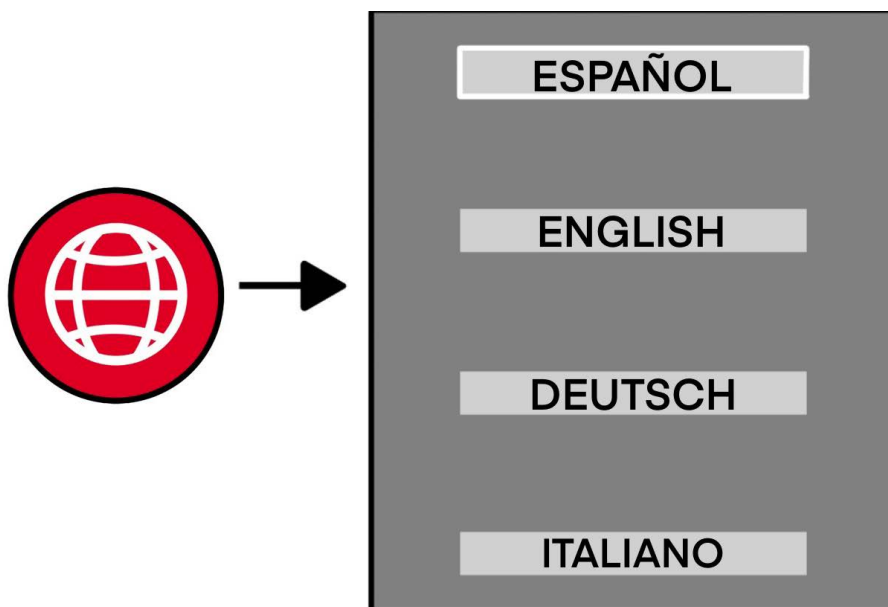


How should it be implemented?

This can be partially achieved by making use of very common options such as resolution settings, texture quality, shading, etc. However, beyond configuring these performance options (adapting the game better to the needs of the equipment), there should be an option to not require using the graphics card or screen at all.

# 33 Language

Accessibility guidelines  
**2 star**



Name of the accessibility guideline

Idioma

Description of the guideline

The audio and subtitle language can be configured. This customisation should be in Spanish.

Profiles it applies to

Without vision and Limited cognition, language or learning (**mandatory**).

Difficulty of implementation

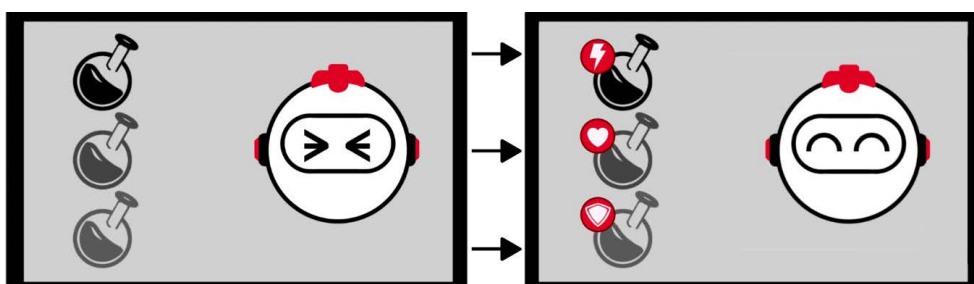


How should it be implemented?

The possibility of localisation in several languages should be considered at the start of design. A spreadsheet/php with columns with languages and content could be used to make it easier to translate the game. The main difficulty lies in the extra cost that can be incurred by localising games into more than one language (text and audio).

# 34 Colour-coded information

Accessibility guidelines  
**2 star**



Name of the accessibility guideline

Colour-coded information

Description of the guideline

Any information relevant to the video game that relies exclusively on colour (e.g. colour potions that include objects inside or textures) must provide that information in an alternative way.

Profiles it applies to

Limited vision (**mandatory**) and Without perception of colour (**mandatory**).

Difficulty of implementation



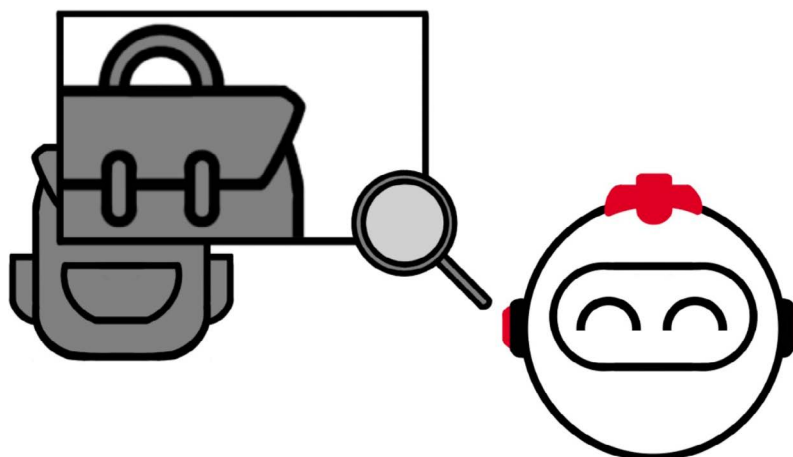
How should it be implemented?

Information on game elements (props) must be displayed in a way that is not exclusively dependent on the colour of the prop (e.g. by additionally using textures or symbols).



# 35 Screen magnifier

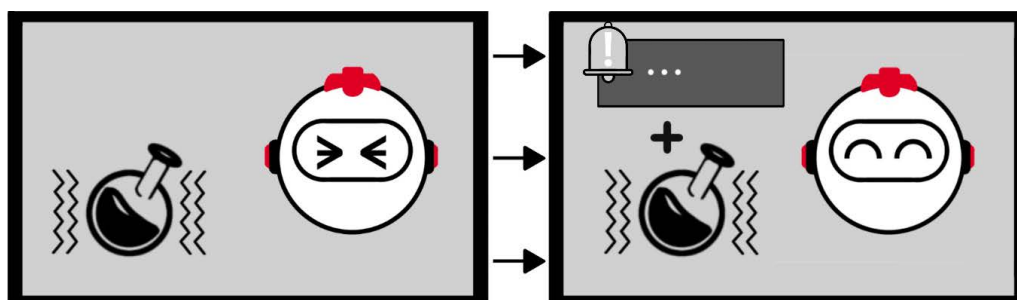
Accessibility guidelines  
**2 star**



Name of the accessibility guideline	Screen magnifier
Description of the guideline	Magnifies a part of the screen.
Profiles it applies to	Limited vision.
Difficulty of implementation	★ ★
How should it be implemented?	Different techniques can be applied depending on the game. The simplest may be to use an additional camera (+ a viewfinder) to visualise the elements on screen that are in focus with the pointer with a specific magnification level, editable or not. To do this, a button would have to be assigned to activate/deactivate this magnifying camera.

# 36 Visual notifications

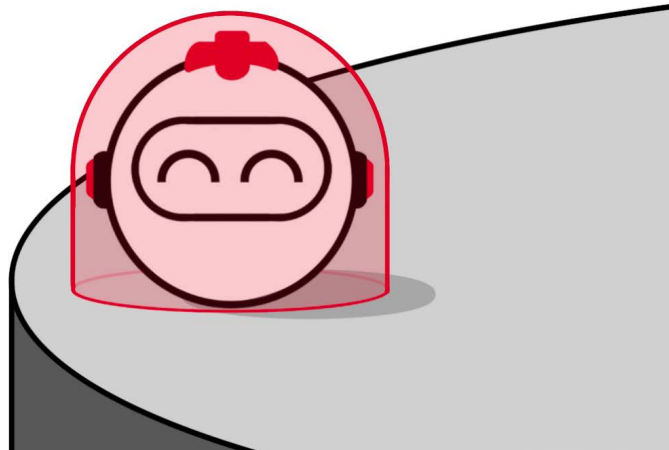
Accessibility guidelines  
**2 star**



Name of the accessibility guideline	Visual notifications
Description of the guideline	Notifications complementary to the warnings or notifications played in the game.
Profiles it applies to	Without hearing ( <b>mandatory</b> ), Limited hearing.
Difficulty of implementation	★★
How should it be implemented?	Add texts and/or descriptive indicators that accurately represent the audio warnings. These warnings should be considered from the design and technical script phase.

# 37 Volume perception of objects

Accessibility guidelines  
**2 star**



Name of the accessibility guideline

Volume perception of objects

Description of the guideline

Helps to distinguish objects, characters or other video game elements using volume.

Profiles it applies to

Without vision, Limited vision and Limited cognition, language or learning.

Difficulty of implementation

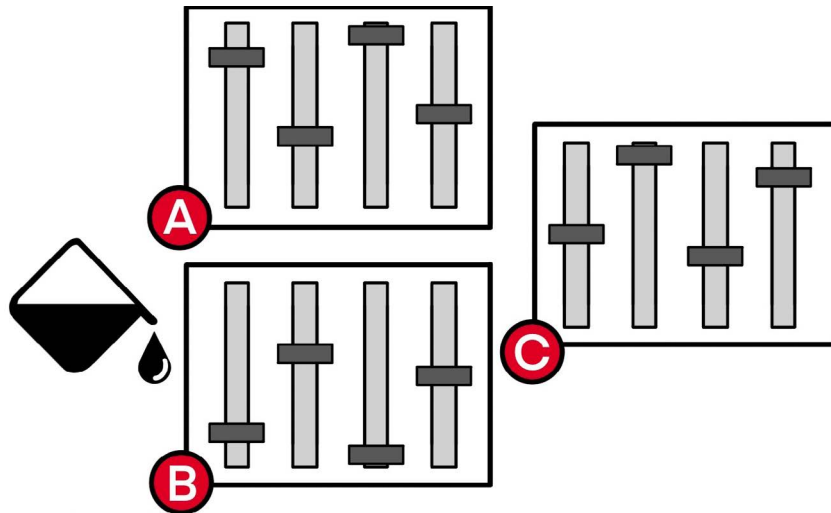


How should it be implemented?

Adding a collider to objects/characters with a certain shape and colour to help better perceive the volume of things.

# 38 Colour customisation

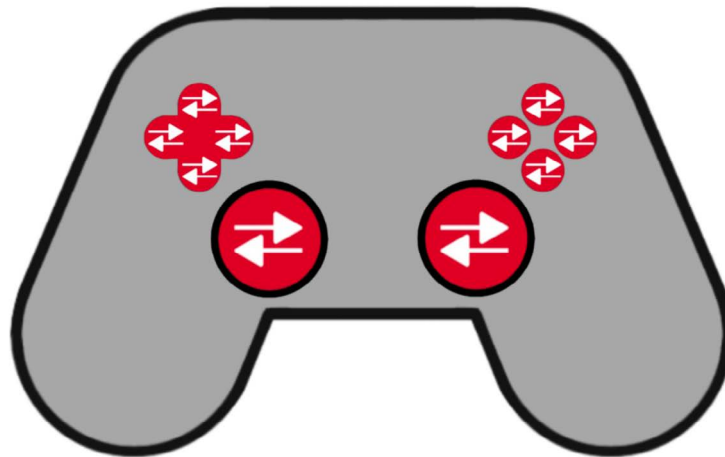
Accessibility guidelines  
**2 star**



Name of the accessibility guideline	Colour customisation
Description of the guideline	Customisation of colours of the interface and other elements, as well as settings for colour blind users.
Profiles it applies to	Limited vision and Without perception of colour ( <b>mandatory</b> ).
Difficulty of implementation	★★
How should it be implemented?	Colour-related options should be taken into account from the early stages of development. A possible solution would be to create the textures with white/black tones (considering a greyscale) and then to apply the appropriate colouring via code. This would allow changing colours and creating a wide variety of palettes, making it easier for certain users to identify shades.

# 39 Control customisation

Accessibility guidelines  
**2 star**



Name of the accessibility guideline

Control customisation

Description of the guideline

Allows the controls to be completely reassigned and customised to the player's liking or with pre-set modes (such as left-handed, alternative, etc.).

Profiles it applies to

Severe limitation in manipulation or strength **(mandatory)** and Moderate limitation in manipulation or strength.

Difficulty of implementation

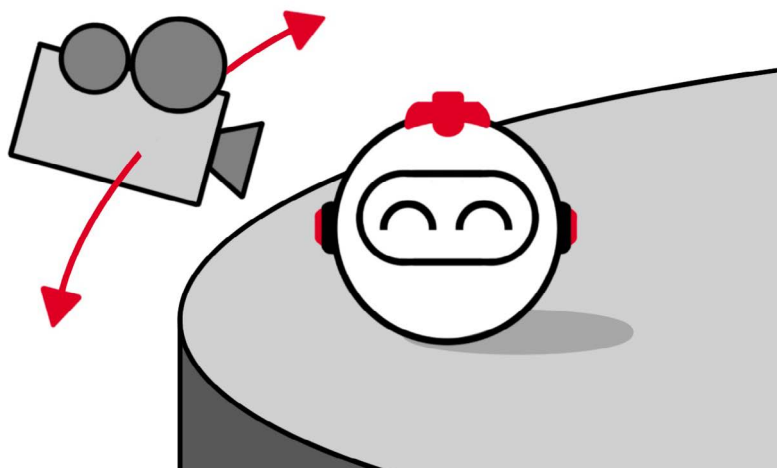


How should it be implemented?

This guideline can be complied to by providing the possibility of reassigning the input devices' buttons in options. This would allow users to modify the default layouts (alternatives pre-designed by the studio).

# 40 Camera positioning

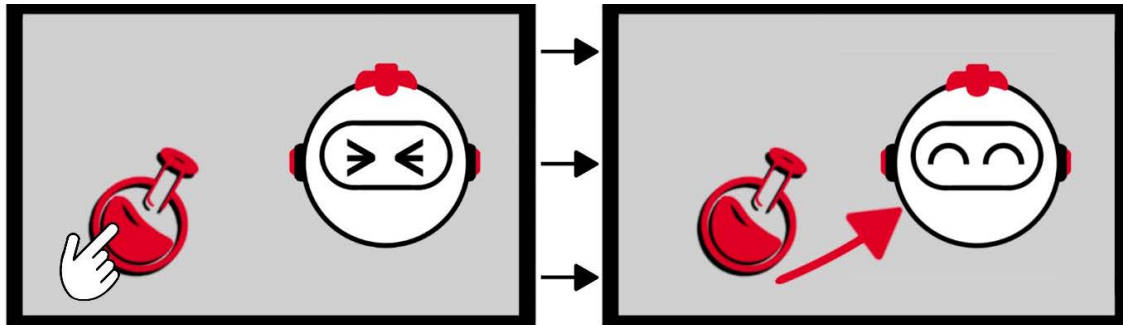
Accessibility guidelines  
2 star



Name of the accessibility guideline	Camera positioning
Description of the guideline	Helps to position the camera correctly within the game.
Profiles it applies to	Without vision ( <b>mandatory</b> ), Limited vision, Severe limitation in manipulation or strength ( <b>mandatory</b> ) and Moderate limitation in manipulation or strength.
Difficulty of implementation	★★
How should it be implemented?	Camera positioning can be done by button interaction or by standby (repositioning after a few seconds have gone by without the player touching the camera control).

# 41 Performing automatic actions

Accessibility guidelines  
**2 star**



Name of the accessibility guideline

Performing automatic actions

Description of the guideline

Allows picking up items, objects, changing weapons or other important in-game actions automatically.

Profiles it applies to

Without vision, Limited vision, Severe limitation in manipulation or strength **(mandatory)** and Moderate limitation in manipulation or strength.

Difficulty of implementation



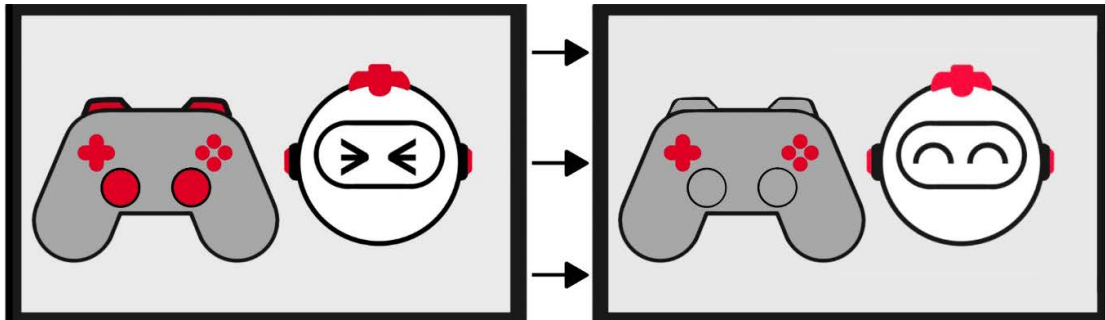
How should it be implemented?

The classic button collection should be replaced by a proximity interaction system, where items are picked up when the avatar gets close enough. Automatic weapon management should be completed based on different criteria (when you run out of ammunition it should reload, at certain times picking the best weapon for that context makes sense, etc.).

For more complex integrations, a technical script would need to be created, indicating which behaviours should be activated or deactivated at which precise moments.

# 42 Simplified walkthrough

Accessibility guidelines  
2 star



Name of the accessibility guideline

Simplified walkthrough

Description of the guideline

Simplifies interaction with the game, e.g. by using the same button for multiple actions or by reducing the gameplay to the minimum number of controls possible.

Profiles it applies to

Without vision, Severe limitation in manipulation or strength (**mandatory**) and Limited cognition, language or learning (**mandatory**).

Difficulty of implementation



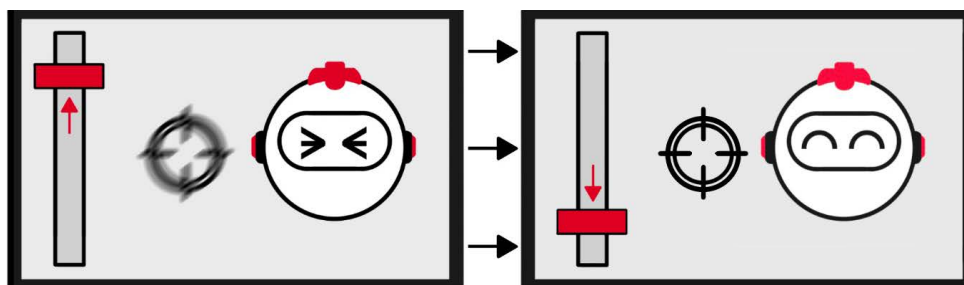
How should it be implemented?

If considered from the outset, this guideline is easy to integrate. A button just needs to be indicated (once this mode is activated) that would then control the vast majority of actions in the game.



# 43 Pointing sensitivity

Accessibility guidelines  
**2 star**



Name of the accessibility guideline

Pointing sensitivity

Description of the guideline

Makes the pointer move faster or slower.

Profiles it applies to

Severe limitation in manipulation or strength **(mandatory)** and Moderate limitation in manipulation or strength.

Difficulty of implementation

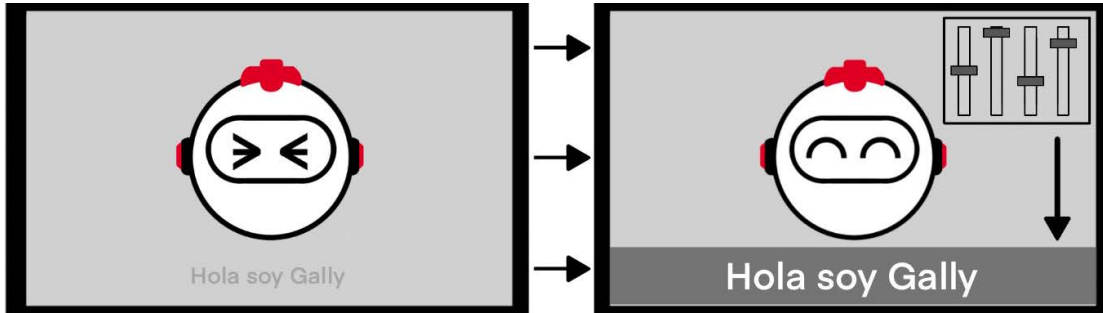


How should it be implemented?

Options should be included in the menu to control the camera's sensitivity, as well as to incorporate more advanced related features (e.g. being able to dynamically modify the speed of the pointer, making it move slower when over a target).

# 44 Subtitles

Accessibility guidelines  
**2 star**



Name of the accessibility guideline

Subtitles

Description of the guideline

Including subtitles that incorporate information that goes beyond the purely spoken (closed captions) with the possibility of customising the size, background or speaker among many other properties.

Profiles it applies to

Without hearing (**mandatory**),  
Limited hearing (**mandatory**).

Difficulty of implementation



How should it be implemented?

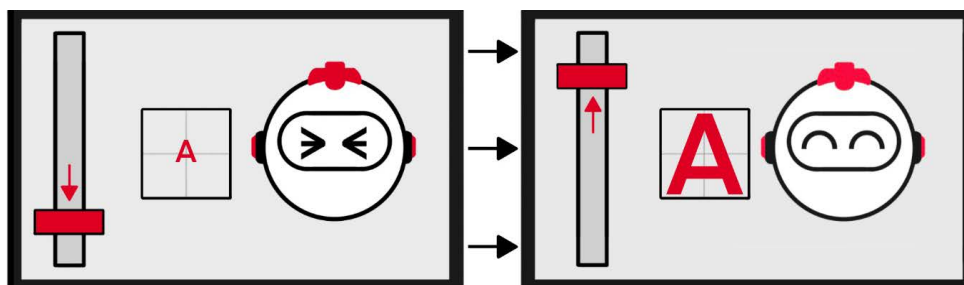
Subtitles must be customisable, considering a number of variables:

- Font
- Thickness
- Font colour
- Size
- Background colour
- Transparency

Beyond dialogue (and ambient sounds during dialogue), the necessary content should be displayed due to proximity when approaching signs/objects/points of interest.

# 45 Font size

Accessibility guidelines  
**2 star**



Name of the accessibility guideline

Font size

Description of the guideline

Sets the font size of the video game in menus or other elements. Text that is embedded in the environment (ammunition in a weapon's scope, time on a clock) is not considered in this criterion.

Profiles it applies to

Limited vision (**mandatory**).

Difficulty of implementation



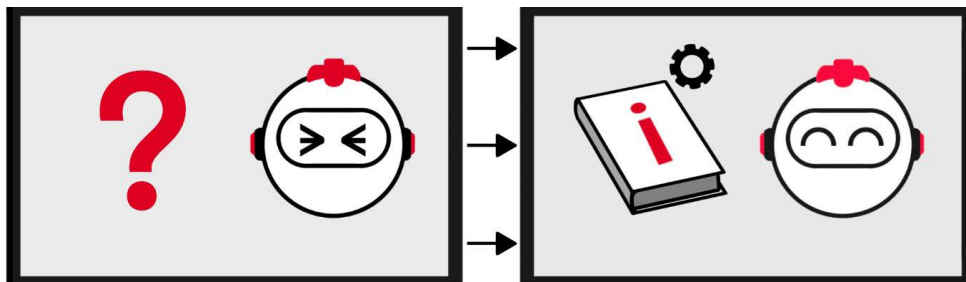
How should it be implemented?

From the design phase, the maximum and minimum size of sentences should be taken into account to improve display/layout.

Other options such as background and font colour should be considered.

# 46 Tutorials

Accessibility guidelines  
2 star



Name of the accessibility guideline

Tutorials

Description of the guideline

There is a tutorial in the video game that explains basic functionality and how to do the actions and functions within the game, combat, story, multiplayer, etc.

Profiles it applies to

Limited cognition, language or learning (mandatory).

Difficulty of implementation



How should it be implemented?

Tutorials should be provided to explain the mechanics and features in a clear and intuitive way. That content should be worked on from the design phase.

# Accessibility guidelines

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1 star

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2 stars

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**3 stars**

(7 guidelines)

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4 stars

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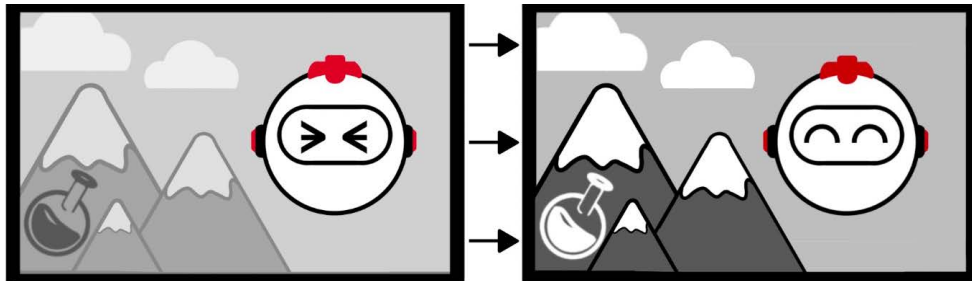
5 stars

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# 47 High contrast

Accessibility guidelines  
3 star



Name of the accessibility guideline

High contrast

Description of the guideline

Noticeable difference between light and dark in an image, in different elements to augment visual clarity. Sometimes this would allow enemies to be in one colour like red, allies in blue and objects in yellow. Separate in comments whether this refers to marking the enemies or the background.

Profiles it applies to

Limited vision (**mandatory**), Limited cognition, language or learning and Without perception of colours.

Difficulty of implementation

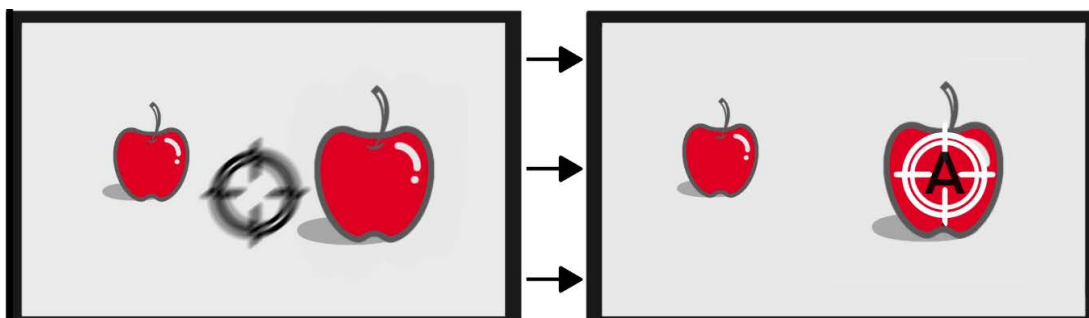


How should it be implemented?

The necessary video options could be enabled in the main menu to better adapt this guideline to the profiles that may need it most. High contrast should also modify the way enemies and allies are seen, and they should be marked with specific colours. To ensure a customised experience, the materials assigned to each type of element should vary depending on the option selected.

# 48 Auto-aim

Accessibility guidelines  
**3 star**



Name of the accessibility guideline

Auto-aim

Description of the guideline

Points directly at the nearest enemy.

Profiles it applies to

Without vision (**mandatory**), Limited vision, Severe limitation in manipulation or strength (**mandatory**), and Moderate limitation in manipulation or strength.

Difficulty of implementation



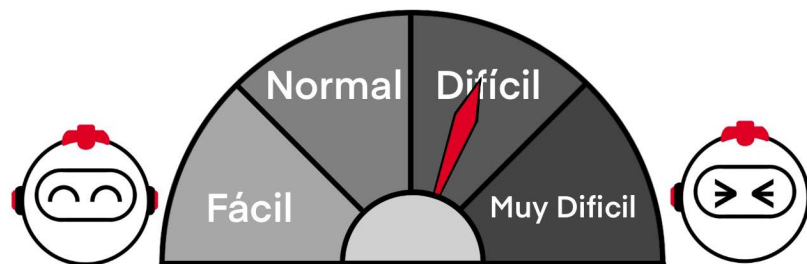
How should it be implemented?

Targets must be managed based on their position relative to the avatar, as the game has to detect the nearest enemy and point at it automatically. It should be noted that this guideline's complexity is variable, depending to a large extent on the type of game being played.



# 49 Difficulty

Accessibility guidelines  
**3 star**



Name of the accessibility guideline

Difficulty

Description of the guideline

Allows you to change the difficulty of the entire video game. There are usually four modes: easy, medium, hard, extreme.

Profiles it applies to

Without vision, Severe limitation in manipulation or strength (**mandatory**) and Moderate limitation in manipulation or strength.

Difficulty of implementation

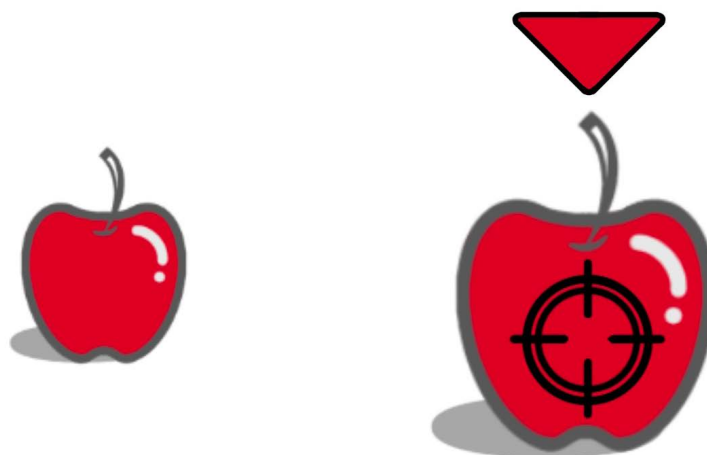


How should it be implemented?

In the level design phase, we should have two, three or four layers of difficulty (depending on the title). Then the user can pick the difficulty they want using the options menu or when they start a new game, which will load the enemies/items/powerups for that level (based on what was previously designed).

# 50 Target lock

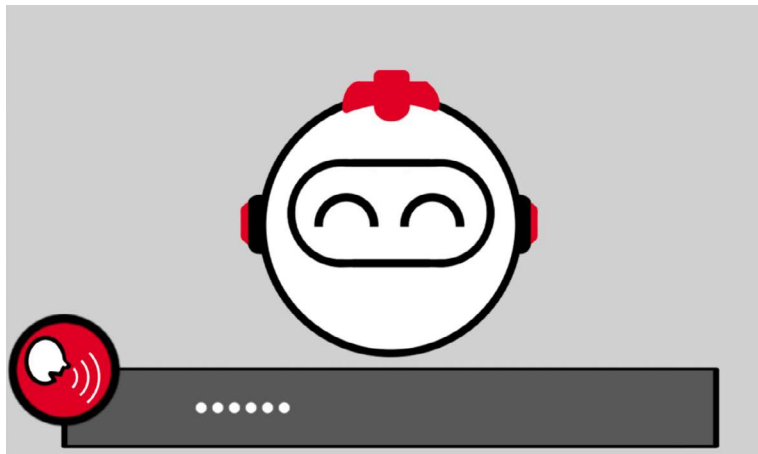
Accessibility guidelines  
**3 star**



Name of the accessibility guideline	Target lock
Description of the guideline	Pointing automatically locks on an enemy.
Profiles it applies to	Without vision ( <b>mandatory</b> ), Limited vision, Severe limitation in manipulation or strength ( <b>mandatory</b> ), Moderate limitation in manipulation or strength, and Limited cognition, language or learning.
Difficulty of implementation	★★★
How should it be implemented?	This is a guideline similar to auto-aim, but does not automatically target the enemy closest to the avatar, but the enemy closest to the target. Automating enemy lock-on by simply pointing at the target is easy to implement if the auto-aim mechanism is already in place. In that case, the lock button is in the background, making the selection automatic (you should be able to turn the target on or off manually).

# 51 Screen reader

Accessibility guidelines  
**3 star**



Name of the accessibility guideline

Screen reader

Description of the guideline

Component that identifies and interprets what is displayed on the screen. This is referred to as Text to Speech in some video games.

Profiles it applies to

Without vision (**mandatory**).

Difficulty of implementation



How should it be implemented?

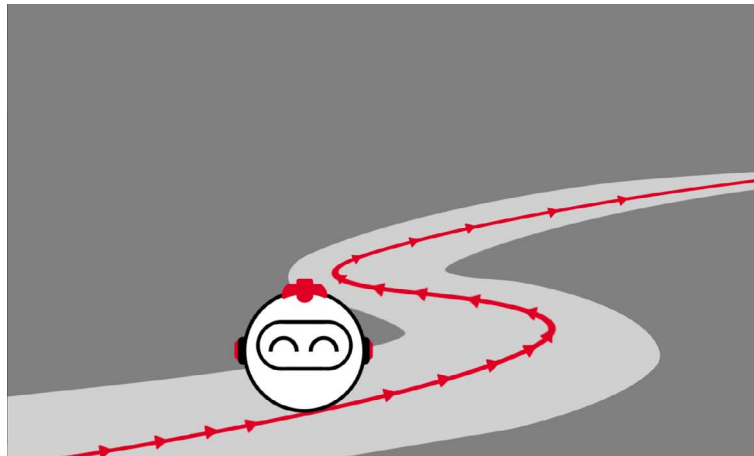
There are some tools (and APIs) that interpret the text that appears on the screen and play it over audio messages. Although this is a digital voice, which some users may not like, it saves the studio steep production costs.

Some options available to roll out this guideline would be:

- Text-to-Speech Plugin
- Dubbing all in-game text with voice actors (high cost).

# 52 Mounts, transports and automatic movements

Accessibility guidelines  
**3 star**



Name of the accessibility guideline

Mounts, transports and automatic movements

Description of the guideline

If these elements are included in the game they should be activated or advance automatically.

Profiles it applies to

Without vision (**mandatory**), Limited vision, Severe limitation in manipulation or strength (**mandatory**), Moderate limitation in manipulation or strength, and Limited cognition, language or learning.

Difficulty of implementation

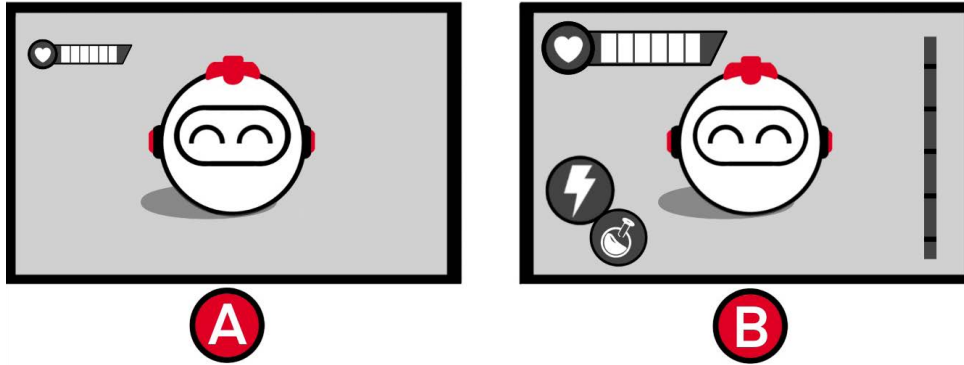


How should it be implemented?

An assistance system should be implemented that allows going from one point to another automatically (picking the best route from those possible). If this guideline is activated in options, all vehicles and mounts will move automatically when used. How hard this is to implement will depend on the game (some will require AI, in others only a route needs to be managed).

# 53 HUD customisation

Accessibility guidelines  
**3 star**



Name of the accessibility guideline

HUD customisation

Description of the guideline

HUD is the information that is displayed on screen at all times during the game, generally in the form of icons and numbers, such as the number of lives, points, health and armour level, mini-map, depending on the game. In this criterion, aspects such as scale, background, colour, flickering, etc. can be customised. It could include information projected on the environment (walls or other objects).

Profiles it applies to

Limited vision (**mandatory**).

Difficulty of implementation



How should it be implemented?

When considering the HUD's initial design, all HUD elements and all of its possible variants should be kept in mind. Once all the possible variants have been implemented, it can be adapted to the user's taste by means of a HUD manager in the options menu.



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# Accessibility guidelines

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1 star

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2 stars

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3 stars

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**4 stars**

(5 guidelines)

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5 stars

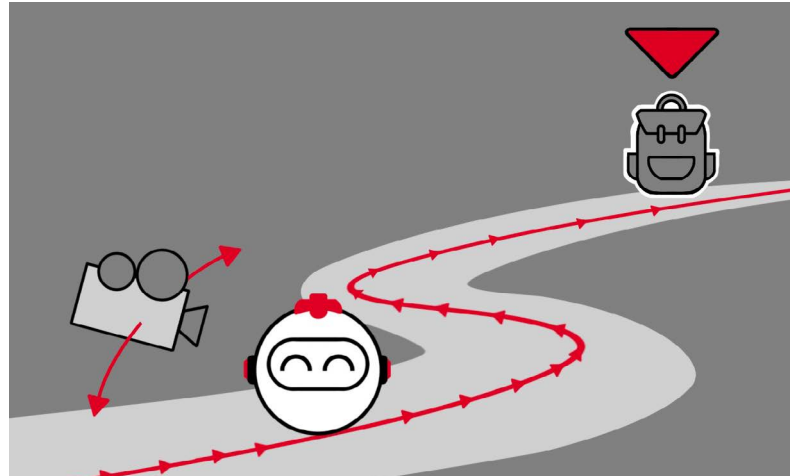
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# 54 Navigation aid

Accessibility guidelines  
4 star



Name of the accessibility guideline

Navigation aid

Description of the guideline

Dynamically places markers to help you navigate to the waypoint location, automatically rotates the camera. If necessary, it offers the possibility of autopilot or assisted navigation. It also includes notifications to improve orientation in the game, like knowing if there is an open space, knowing if there is a wall, or a sound to let you know if there is a door nearby.

Profiles it applies to

Without vision (mandatory), Limited vision and Limited cognition, language or learning (mandatory).

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Difficulty of implementation



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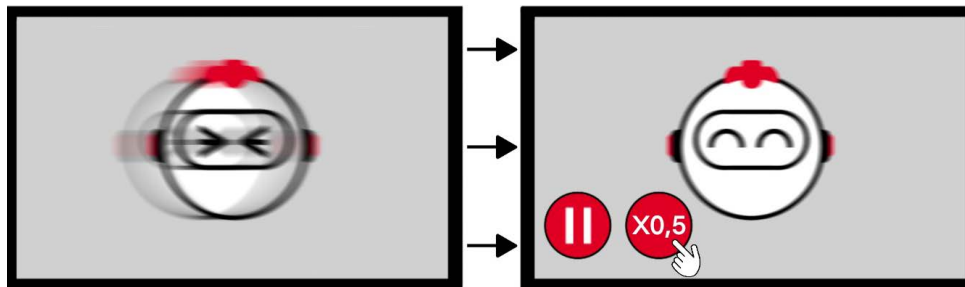
How should it be implemented?

This guideline requires complex planning in the initial game design (it will also depend on the type of product). These minimum mechanics must be included:

- Placement of markers:  
affects game design and controls, careful thought must be given to how to implement the markers.
- Autopilot:  
involves automatic camera orientation or guidance, which will always depend on the game being created. Consideration should be given to including wayfinding or similar self-guiding systems.
- Environment identification:  
requires including labels for all materials/ props/colliders so that they can be unambiguously identified. Thought should also be given to how to display this information on screen.

# 55 Rapid response events

Accessibility guidelines  
4 star



Name of the accessibility guideline

Rapid response events

Description of the guideline

Slow down or stop the game's action to be able to interact, also called slow motion.

Profiles it applies to

Limited vision (**mandatory**), Severe limitation in manipulation or strength (**mandatory**) and Moderate limitation in manipulation or strength (**mandatory**).

Difficulty of implementation



How should it be implemented?

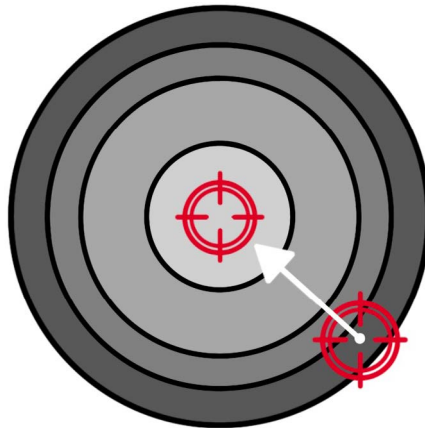
There are several aspects to consider:

- Button controlling time (pressing slows down, or alternating on/off with each press).
- Slowing down time by script (the designer will indicate at what point it should slow down).

To be successful, this option needs to be considered early in development, as it can be hard to implement.

# 56 Aim Assist

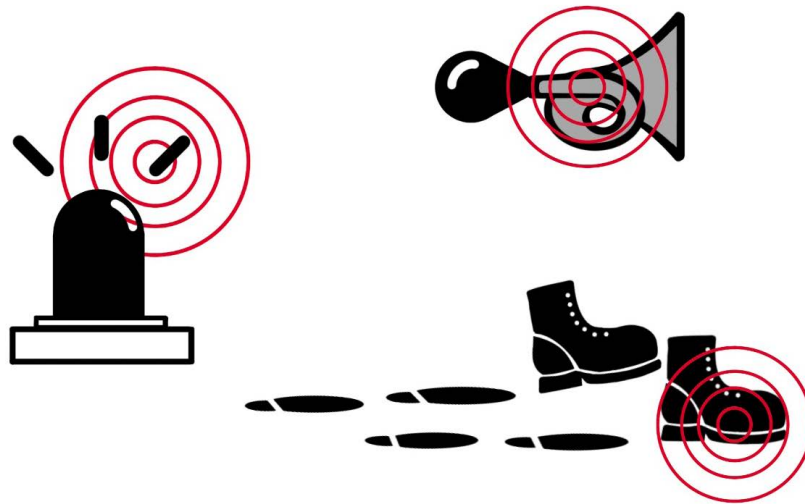
Accessibility guidelines  
4 star



Name of the accessibility guideline	Aim Assist
Description of the guideline	Influences the trajectory of a projectile to hit a target or aiming mode which does not need press and hold.
Profiles it applies to	Without vision ( <b>mandatory</b> ), Limited vision, Severe limitation in manipulation or strength ( <b>mandatory</b> ), Moderate limitation in manipulation or strength ( <b>mandatory</b> ) and Limited cognition, language or learning.
Difficulty of implementation	★★★★
How should it be implemented?	When the player places the cross hair over a target, the game will make the necessary adjustments to position the pointer over key points on it (taking into account enemy movements).

# 57 Sound cues

Accessibility guidelines  
4 star



Name of the accessibility guideline

Sound cues

Description of the guideline

Sound cues complementary to the information displayed on the screen (footsteps, sirens, warnings, miscellaneous alerts).

Profiles it applies to

Without vision (**mandatory**),  
Limited vision (**mandatory**).

Difficulty of implementation



How should it be implemented?

As with many of the above guidelines, this implementation should be considered at an early design stage, taking into account these complementary audio cues and indicating which elements will set them off.

A possible solution would be to link the audio files and when they should be broadcast with their vfx.

# 58 Predictive text

Accessibility guidelines  
4 star



Name of the accessibility guideline	Predictive text
Description of the guideline	This technology allows words to be generated by pressing a single button for each letter, as opposed to pressing each key multiple times until the desired word is shown. It provides support to not have to go letter by letter when typing (e.g. autocomplete).
Profiles it applies to	Limited vision, Without hearing, Severe limitation in manipulation or strength, Moderate limitation in manipulation or strength and Limited cognition, language or learning.
Difficulty of implementation	★★★★
How should it be implemented?	A prediction system and a dictionary to support it needs to be created, growing with new terms used and offering the most frequently used words first.

# Accessibility guidelines

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1 star

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2 stars

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3 stars

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4 stars

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**5 stars**

**(3 guidelines)**

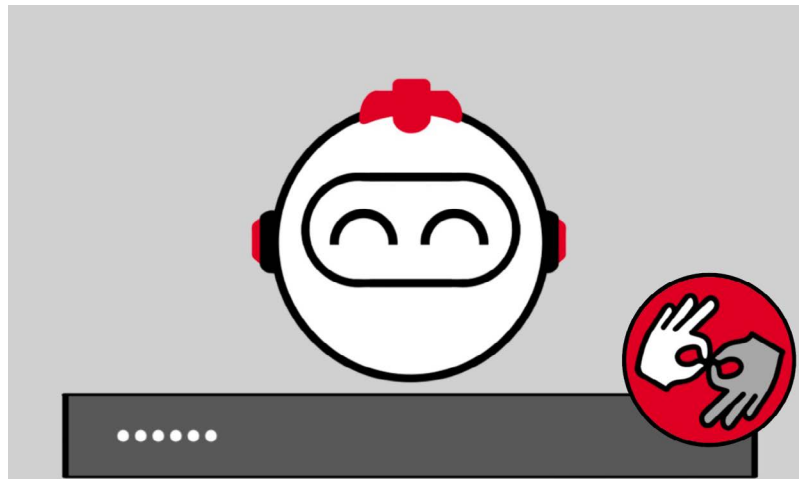
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# 59 Sign language interpreter

Accessibility guidelines  
**5 star**



Name of the accessibility guideline

Sign language interpreter

Description of the guideline

Includes a sign language interpreter activated at some points in the video game.

Profiles it applies to

Without hearing, Limited hearing.

Difficulty of implementation

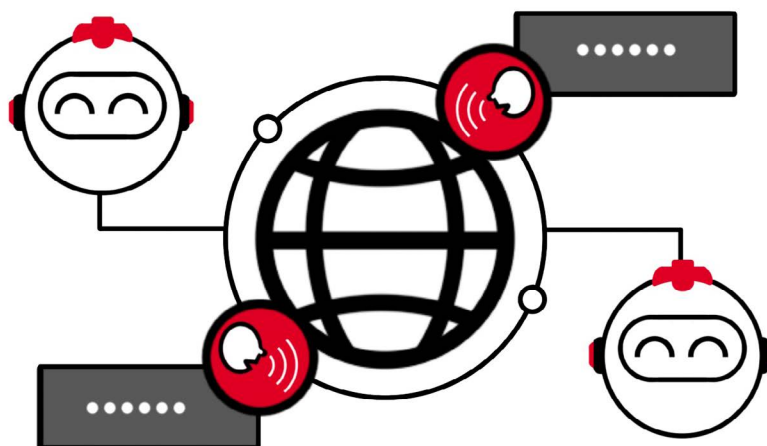


How should it be implemented?

A frame (with a fixed position) containing the representation of a sign language interpreter needs to be included (with a video or through an automated dubbing system, which registers all the necessary symbols in the game). Keep in mind that there are different sign languages for different spoken languages.

# 60 Speech-to-text (multiplayer)

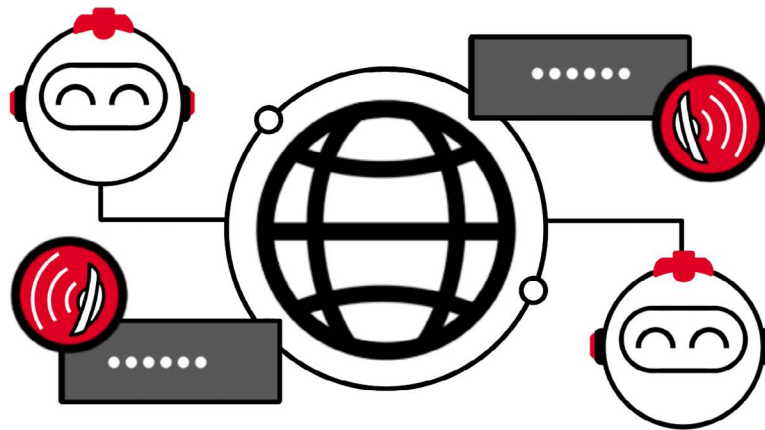
Accessibility guidelines  
5 star



Name of the accessibility guideline	Speech-to-text (multiplayer)
Description of the guideline	If text interaction is required in multiplayer mode or other circumstances, this should also work with voice dictation at the input.
Profiles it applies to	Without vision ( <b>mandatory</b> ), Limited vision, Without hearing ( <b>mandatory</b> ), Limited hearing.
Difficulty of implementation	★★★★★
How should it be implemented?	An API can be used or voice dictation can be programmed in so that the in-game chat allows the users to use their voice to compose a message.

# 61 Text-to-Speech (multiplayer)

Accessibility guidelines  
5 star



Name of the accessibility guideline

Text-to-Speech (multiplayer)

Description of the guideline

Enables on-screen text narration. This usually occurs in multiplayer video games. This is the feature where the user types and then that text is transformed using a voice synthesiser to be delivered over voice chat.

Profiles it applies to

Without vision (**mandatory**) and Limited vocal capability (**mandatory**).

Difficulty of implementation



How should it be implemented?

There are numerous APIs that use digital voices to interpret the text displayed on the screen (and in several languages). This should be included within the game chat itself, so that incoming text messages can be listened to. There is some complexity involved in managing this, such as knowing in advance what language you are typing in.

# Summary of guidelines, profiles and difficulties

Boxes with a star are guidelines that are strictly necessary to satisfy that profile or allow them to play.


Guideline/ Profile	Vision		Hearing		Limitation in manipulation or strength		Limited cognition, language or learning	Without perception of colour	Limited vocal capability
	Limited	Without	Limited	Without	Moderate	Severe			
3D audio	★	★	★	-	-	-	-	-	-
Translation warnings	-	-	-	-	-	-	★	-	-
Turn off tinnitus sounds	-	-	★	-	-	-	-	-	-
D-pad	-	-	-	-	★	-	-	-	-
Notification duration	★	★	★	★	-	-	-	-	-
Repeating effects	★	★	★	★	★	★	★	★	★
Stamina	-	★	-	-	★	★	★	-	-
Events in kinematics	★	-	-	-	-	-	-	-	-



Guidelines where they are strictly necessary to satisfy or enable that profile to play.


Guideline/ Profile	Vision		Hearing		Limitation in manipulation or strength		Limited cognition, language or learning	Without perception of colour	Limited vocal capability
	Limited	Without	Limited	Without	Moderate	Severe			
Representative icons	★	-	-	-	-	-	★	-	-
Joystick switch	-	-	-	-	★	★	-	-	-
Action marker	-	-	-	-	-	-	★	-	-
Sound mixing	-	-	★	-	-	-	-	-	-
Modifiers	-	-	★	-	★	★	-	-	-
Co-pilot mode	★	★	-	-	★	★	★	-	-
Haptic notifications	★	★	★	★	-	-	-	-	-
Omitting mechanics	★	★	★	-	-	-	★	-	-
Pausing verbalised messages	-	★	-	-	-	-	-	-	-

Guideline/ Profile	Vision		Hearing		Limitation in manipulation or strength		Limited cognition, language or learning	Without perception of colour	Limited vocal capability
	Limited	Without	Limited	Without	Moderate	Severe			
Auditory accessibility pre-settings	-	-	★	★	-	-	-	-	-
Physical or motor accessibility pre-settings	-	-	-	-	★	★	-	-	-
Visual accessibility pre-settings	★	★	-	-	-	-	-	-	-
Contextual reminders	-	-	-	-	-	-	★	★	-
Blur reduction	★	-	-	-	-	-	-	-	-
Camera shake reduction	★	-	-	-	-	-	-	-	-
Repeat last message	-	★	-	-	-	-	-	-	-

 Guidelines where they are strictly necessary to satisfy or enable that profile to play.


Guideline/ Profile	Vision		Hearing		Limitation in manipulation or strength		Limited cognition, language or learning	Without perception of colour	Limited vocal capability
	Limited	Without	Limited	Without	Moderate	Severe			
Motion and camera sensitivity	-	-	-	-	★	★	-	-	-
Alternative easy-to-read font	-	-	-	-	-	-	★	-	-
Volume	★	★	★	-	-	-	-	-	-
Not dependent on voice interaction	-	-	-	-	-	-	-	-	★
Anticaídas	-	★★	-	-	★★	★★	-	-	-
Shortcuts	-	-	-	-	★★	★★	★★	-	-
Audio description	-	★★	-	-	-	-	-	-	-
Disable graphics processing	-	★★	-	-	-	-	-	-	-
Language	-	★★	-	-	-	-	★★	-	-

Guideline/ Profile	Vision		Hearing		Limitation in manipulation or strength		Limited cognition, language or learning	Without perception of colour	Limited vocal capability
	Limited	Without	Limited	Without	Moderate	Severe			
Colour-coded information	★★	-	-	-	-	-	-	★★	-
Screen magnifier	★★	-	-	-	-	-	-	-	-
Visual notifications	-	-	★★	★★	-	-	-	-	-
Volume perception of objects	★★	★★	-	-	-	-	★★	-	-
Colour customisation	★★	-	-	-	-	-	-	★★	-
Control customisation	-	-	-	-	★★	★★	-	-	-
Camera positioning	★★	★	-	-	★★	★★	-	-	-
Performing automatic actions	★★	★★	-	-	★★	★★	-	-	-
Simplified walkthrough	-	★★	-	-	-	★★	★★	-	-

 Guidelines where they are strictly necessary to satisfy or enable that profile to play.

Guideline/ Profile	Vision		Hearing		Limitation in manipulation or strength		Limited cognition, language or learning	Without perception of colour	Limited vocal capability
	Limited	Without	Limited	Without	Moderate	Severe			
Pointing sensitivity	-	-	-	-	★★	★★	-	-	-
Subtitles	-	-	★★	★★	-	-	-	-	-
Font size	★★	-	-	-	-	-	-	-	-
Tutorials	-	-	-	-	-	-	★★	-	-
High contrast	★★★	-	-	-	-	-	★★★	★★★	-
Auto-aim	★★★	★★★	-	-	★★★	★★★	-	-	-
Difficulty	-	★★★	-	-	★★★	★★★	-	-	-
Target lock	★★★	★★★	-	-	★★★	★★★	★★★	-	-
Screen reader	-	★★★	-	-	-	-	-	-	-
Mounts, transports and automatic movements	★★★	★★★	-	-	★★★	★★★	★★★	-	-
HUD customisation	★★★	-	-	-	-	-	-	-	-

Guideline/ Profile	Vision		Hearing		Limitation in manipulation or strength		Limited cognition, language or learning	Without perception of colour	Limited vocal capability
	Limited	Without	Limited	Without	Moderate	Severe			
Navigation aid	★★ ★★	★★ ★★	-	-	-	-	★★ ★★	-	-
Rapid response events	★★ ★★	-	-	-	★★ ★★	★★ ★★	★★ ★★	-	-
Aim Assist	★★ ★★	★★ ★★	-	-	★★ ★★	★★ ★★	★★ ★★	★★ ★★	-
Sound cues	★★ ★★	★★ ★★	-	-	-	-	-	-	-
Predictive text	★★ ★★	-	-	★★ ★★	★★ ★★	★★ ★★	★★ ★★	★★ ★★	-
Sign language interpreter	-	-	★★ ★★ ★★	★★ ★★ ★★	-	-	-	-	-
Speech-to-text (multiplayer)	★★ ★★ ★★	★★ ★★ ★★	★★ ★★ ★★	★★ ★★ ★★	-	-	-	-	-
Text-to-speech (multiplayer)	-	★★ ★★ ★★	-	-	-	-	-	-	★★ ★★ ★★

 Guidelines where they are strictly necessary to satisfy or enable that profile to play.

# Self-assessment



A table has been included below with the accessibility guidelines for each of the profiles so you can assess your product and see whether or not it meets each's criteria. If you need a more in-depth objective analysis of the video game's accessibility, feel free to contact the team behind Ga11y: accessible video games over our official website:

[ga11y.fundaciononce.es](http://ga11y.fundaciononce.es)

Compliant, Not Compliant or Not Applicable should be marked with an 'X' as appropriate, with only one of the three possible for each guideline. Some guidelines may not apply to every game, like:

*'If the video game doesn't include any evidence or mechanics related to aiming, some accessibility guidelines such as **Aim Assist** or **Auto-aim** will be Not Applicable'.*

In the Remarks field please feel free to note down any comment you like about that accessibility guideline in the video game (compliant, non-compliant or not applicable).



## Limited vision (30 guidelines)

Self-assessment

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
3D audio				
Notification duration				
Repeating effects				
Events in kinematics				
Representative icons				
Co-pilot mode				
Haptic notifications				
Omitting mechanics				
Visual accessibility pre-settings				
Blur reduction <b>(mandatory)</b>				
Camera shake reduction <b>(mandatory)</b>				
Volume				
Colour-coded information <b>(mandatory)</b>				
Screen magnifier				
Volume perception of objects				
Colour customisation				
Camera positioning				
Performing automatic actions				
Font size <b>(mandatory)</b>				
High contrast <b>(mandatory)</b>				
Auto-aim				
Target lock				
Mounts, transports and automatic movements				
HUD customisation <b>(mandatory)</b>				
Navigation aid				
Rapid response events <b>(mandatory)</b>				
Aim Assist				
Sound cues <b>(mandatory)</b>				
Predictive text				
Speech-to-text (multiplayer)				

## Without vision (29 guidelines)

Self-assessment

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
3D audio <b>(mandatory)</b>				
Notification duration				
Stamina				
Estamina				
Co-pilot mode				
Haptic notifications <b>(mandatory)</b>				
Omitting mechanics <b>(mandatory)</b>				
Pausing verbalised messages				
Visual accessibility pre-settings				
Repeat last message				
Volume <b>(mandatory)</b>				
Fall arrest <b>(mandatory)</b>				
Audio description <b>(mandatory)</b>				
Disable graphics processing				
Language				
Volume perception of objects				
Camera positioning <b>(mandatory)</b>				
Performing automatic actions				
Simplified walkthrough				
Auto-aim <b>(mandatory)</b>				
Difficulty				
Target lock <b>(mandatory)</b>				
Screen reader <b>(mandatory)</b>				
Mounts, transports and automatic movements <b>(mandatory)</b>				
Navigation aid <b>(mandatory)</b>				
Aim Assist <b>(mandatory)</b>				

## Without vision (29 guidelines)

Self-assessment

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
Sound cues <b>(mandatory)</b>				
Speech-to-text (multiplayer) <b>(mandatory)</b>				
Text-to-speech (multiplayer) <b>(mandatory)</b>				

## Limited hearing (12 guidelines)

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
3D audio				
Turn off tinnitus sounds				
Notification duration				
Repeating effects				
Sound mixing <b>(mandatory)</b>				
Haptic notifications				
Auditory accessibility pre-settings				
Visual notifications				
Subtitles <b>(mandatory)</b>				
Sign language interpreter				
Volume				
Speech-to-text (multiplayer) <b>(mandatory)</b>				

## Without hearing (9 guidelines)

Self-assessment

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
Notification duration				
Repeating effects				
Haptic notifications <b>(mandatory)</b>				
Auditory accessibility pre-settings				
Visual notifications <b>(mandatory)</b>				
Subtitles <b>(mandatory)</b>				
Predictive text				
Sign language inter- preter				
Speech-to-text (multiplayer) <b>(mandatory)</b>				

## Moderate limitation in manipulation or strength (21 guidelines)

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
D-pad				
Repeating effects				
Stamina				
Joystick switch				
Modifiers <b>(mandatory)</b>				
Co-pilot mode				
Physical or motor accessibility pre-settings				
Motion and camera sensitivity				
Fall arrest				

## Moderate limitation in manipulation or strength (21 guidelines)

Self-assessment

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
Shortcuts				
Control customisation				
Camera positioning				
Performing automatic actions				
Pointing sensitivity				
Auto-aim				
Difficulty				
Target lock				
Mounts, transports and automatic movements				
Rapid response events				
Aim Assist <b>(mandatory)</b>				
Predictive text				

## Severe limitation in manipulation or strength (21 guidelines)

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
Repeating effects				
Stamina <b>(mandatory)</b>				
Joystick switch				
Modifiers <b>(mandatory)</b>				
Co-pilot mode <b>(mandatory)</b>				
Physical or motor accessibility pre-settings				

## Severe limitation in manipulation or strength (21 guidelines)

Self-assessment

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
Motion and camera sensitivity <b>(mandatory)</b>				
Fall arrest <b>(mandatory)</b>				
Shortcuts <b>(mandatory)</b>				
Control customisation <b>(mandatory)</b>				
Camera positioning <b>(mandatory)</b>				
Performing automatic actions <b>(mandatory)</b>				
Simplified walkthrough <b>(mandatory)</b>				
Pointing sensitivity <b>(mandatory)</b>				
Auto-aim <b>(mandatory)</b>				
Difficulty <b>(mandatory)</b>				
Target lock <b>(mandatory)</b>				
Mounts, transports and automatic movements <b>(mandatory)</b>				
Rapid response events <b>(mandatory)</b>				
Aim Assist <b>(mandatory)</b>				
Predictive text				

## Limited cognition, language or learning (20 guidelines)

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
Translation warnings				
Repeating effects				

## Limited cognition, language or learning (20 guidelines)

Self-assessment

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
Stamina				
Representative icons				
Action marker				
Co-pilot mode				
Omitting mechanics <b>(mandatory)</b>				
Contextual reminders <b>(mandatory)</b>				
Alternative easy-to-read font				
Shortcuts				
Language <b>(mandatory)</b>				
Volume perception of objects				
Simplified walkthrough <b>(mandatory)</b>				
Tutorials <b>(mandatory)</b>				
High contrast				
Target lock				
Mounts, transports and automatic movements				
Navigation aid <b>(mandatory)</b>				
Aim Assist				
Predictive text				

## Without perception of colour (5 guidelines)

Self-assessment

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
Repeating effects				
Contextual reminders				
Colour-coded information <b>(mandatory)</b>				
Colour customisation <b>(mandatory)</b>				
High contrast				

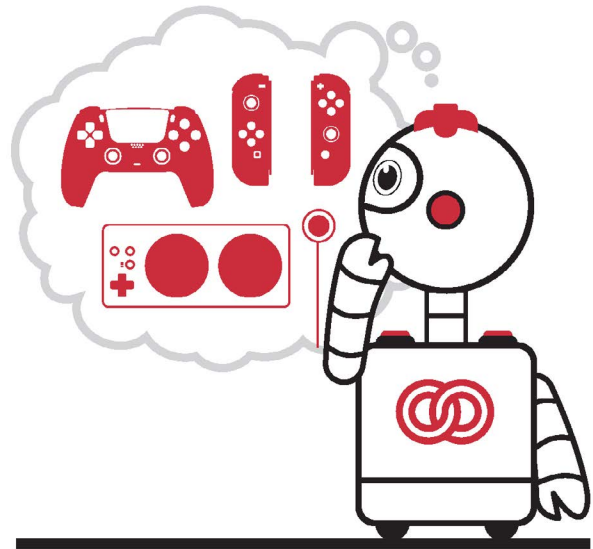
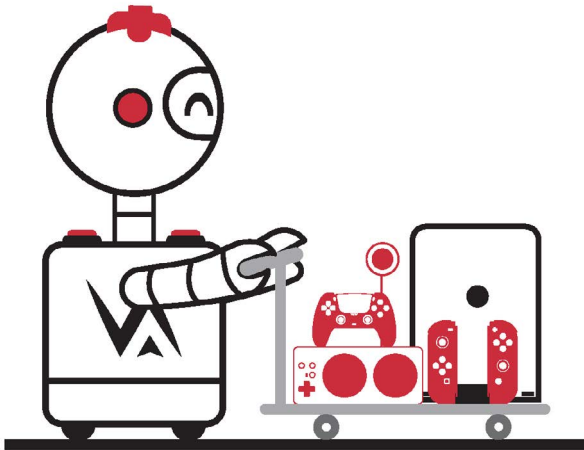
## Limited vocal capability (3 guidelines)

Guideline name	Compliant	Not Compliant	Not Applicable	Remarks
Repeating effects				
Text-to-speech (multiplayer) <b>(mandatory)</b>				
Not dependent on voice interaction <b>(mandatory)</b>				



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# Peripherals



When we refer to a peripheral, we're talking about a device external to a console that is connected to it by a cable or wirelessly, without being part of the main equipment. This external device facilitates information input and output, allowing the player to interact with the gaming platform. As a result, certain parameters such as manoeuvrability, sensitivity, and the mechanism of the peripheral become crucial aspects for players.

The primary barrier to accessibility often doesn't lie within the video game itself but rather in the controllers. Conventional controllers often have ergonomics that pose difficulties for many people. That's why it's crucial to study accessibility in both software and hardware, so the video game can be compatible with various adapted peripherals, depending on the different platforms it is designed for.

Some of the most relevant peripherals currently on the market are included below, although there are of course many others. Various initiatives have been identified within the industry, including both proprietary and third-party commercial products. Disability-related associations have also developed products through collaborations with technical specialists and individuals from 3D Makers programs worldwide, which try to offer as many and as varied products as possible to people with disabilities.

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This way of proceeding positively provokes a current of non-conformism in the organisations, always on the search for new out-of-the-ordinary options that give people with disabilities new interfaces to be able to interact with technology, and specifically, with video games. This is notable, for example, in the Ford Adapta simulator, developed by Ford España and Hi-speed in collaboration with the ONCE Foundation, which allows people with disabilities (who may not have driven before) to drive vehicles in a virtual environment, with the different stimuli and sensations one experiences when driving in real life. Nearly-real experiences are also offered with the OWO GAME haptic jacket, which provides a new channel of communication in the world of video games through touch, being able to feel different types of sensations, such as getting hit by a ball, a dart, a shot, insect bites, being grabbed, lifted, pushed, free falls...

Despite the emergence of innovative solutions and the growth of interesting products coming out of both large and small companies, it is not always enough to provide satisfactory usability for everyone. This is because the alternatives on the market don't cover all users' functional profiles, making 3D printing one of the main allies of people with disabilities in the creation of personalised objects. The boom in 3D printing in recent years has made it possible to create objects, buttons and peripherals that do not exist and to do so at a truly affordable price, overcoming this obstacle: the main ally of accessibility is once again the ability to customise the user's experience.

# XBOX Adaptive Controller



The Xbox Adaptive Controller (XAC) device (manufactured by Microsoft) is a peripheral compatible with the Xbox console that aims to centralise the controls, helping people with reduced mobility use this platform. It can also be used on PCs.

With the Xbox Adaptive Controller (XAC), the user has the option of connecting external devices such as push buttons or joysticks to create a controller that is fully customised to his/her needs.

This level of customisation is based on previous standards, as the inputs for buttons, joysticks and triggers are covered by assistive devices (sold separately) that are connected with the 3.5mm jacks and USB ports on the device.

You have to use the Xbox or Windows Accessories app for button and profile remapping to configure the controls. Multiple controller profiles can be created for different video games in the app and the active profile can be changed at any time by selecting one of three using the Profile button built into the peripheral, ensuring full control within the gaming experience.

Price: 89,99€

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# HORI Flex



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Hori Flex is a controller from Hori, licensed by Nintendo, you can connect additional assistive push buttons and joysticks (both sold separately) to via auxiliary ports and USB inputs. This allows users to customise the configuration and interface to suit their needs.

The Hori Flex is large and has several inputs to connect different buttons, sensors, sticks, etc. into 3.5 mm ports, so users can create a customised control configuration.

The device also has additional buttons on its surface, so that gamers can easily use it without the need for external buttons.

The controls can be configured over the flex controller app with up to 12 user profiles, six for Nintendo Switch and six for PC (there is a switch on the controller to choose which platform).

The device has an attachment on the back so that the peripheral can be placed on multiple supports, making interaction easier for people with reduced mobility.

Price: approximately 230€

# Access Controller



PlayStation announced in January 2023 its adapted controller, codenamed Project Leonardo. Later (May 2023) additional information about the device was released, such as its final name (Access Controller).

It consists of a highly customisable controller kit that works ‘right out of the box’, to help disabled gamers play more easily and comfortably for longer.

It includes a robust set of interchangeable components, including various types of analogue joystick caps (standard, domed and ball-shaped) and button caps with different shapes and sizes (cushioned, flat, double, projected and curved). It also contains interchangeable labels so users can easily mark which inputs they assign to which button. Players can use these components to create all kinds of button layouts.

The distance between the analogue joystick and the directional buttons can be configured to the player’s liking, and the controller can be placed on flat surfaces (with an adjustable 360-degree orientation) or easily attached to a mounting system (AMPS mount or tripod). This way the user can find a configuration to suit his/her particular strength, range of motion and physical needs.

Options for the controller include:

- **Button assignment.**

The controller's buttons can be assigned to any compatible function, and multiple buttons can even be assigned to the same function. Alternatively, players can assign two functions (e.g. 'R2' + 'L2') to the same button.

- **Control profiles**

Players can store button assignment settings as specific control profiles, which can be easily toggled between by pressing the profile button (up to three control profiles can be stored simultaneously on the PS5 console).

- **Toggle mode**

Any button can be set to work in the same way as the caps lock key on a keyboard. Any available input (with toggle mode enabled) can be made to maintain its state without needing to hold that button down (useful for actions such as crouching, aiming, accelerating, sprinting, etc.).

Access Controller can be used as a stand-alone game controller or combined with another Access Controller and/or a DualSense wireless controller. When using multiple peripherals at the same time, actions performed on any of them will be translated into events as if using a single virtual controller, so users can combine devices according to their particular needs or to play collaboratively with others. All the controllers can be configured in terms of sensitivity, initial control position and dead zones.

Other components such as switches, buttons or dedicated analogue joysticks can be added using the Access Controller's four 3.5 mm AUX ports.

Due to the maturity of the product (just announced at the time of writing), aspects such as price and some final features are not yet known.

Full information will be available after the launch on the Ga11y website: [Accessible video games](#).



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The QuadStick is a USB game controller compatible with PS3, PS4, Nintendo Switch and PC. It uses a large, sturdy joystick module to provide control by the player blowing and moving their chin. There are currently three different models available:

- Quadstick FPS Model: has optional multi-user versus single-user functions, with a Bluetooth module that can be used with PC, Mac, iOS or an Android device.
- Quadstick Singleton Model: has a joystick and a single suction/blow sensor.
- Quadstick Original Model: this is the larger model with more specifications.

Other setting options across all models include a centring spring force, input/output mode selection for one of the 3.5mm rear connectors, mouthpiece style and size, as well as initial setting on power-up. It is one of the most widely used and widespread blow/suction peripherals in the community.

Price: approximately 400€



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# Tobii Eye Tracker 5

Peripherals



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The Tobii Eye Tracker 5 peripheral allows you to control video games (or the OS itself) through natural eye and head movements as an additional input system alongside the mouse and keyboard (or a steering wheel).

This device enhances the use of peripheral vision, tracking head and eye movements to interact with the video game, leaving the upper limbs free (they don't need to be used).

The peripheral stands out for its versatility of use in different light conditions, thanks to the precision of its sensors, as well as its easy installation and the wide range of video games it is compatible with (more than 150 titles).

Price: 279€



# Simulador Ford Adapta

Peripherals

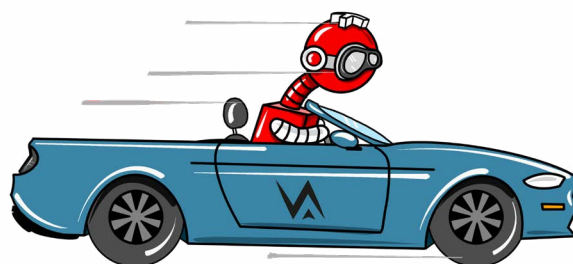


The Ford Adapta simulator, presented by Ford Spain with the ONCE Foundation, is the first simulator with a steering wheel with rims, the same one used in real-life Ford adapted vehicles. The simulator has been created and adapted to the needs of real and virtual drivers with reduced mobility.

Its main feature is that it has an MBH steering wheel, with adaptive rim paddles to control the accelerator and brake, which can be configured. It also has software adapted for people with reduced mobility.

This simulator is compatible with PlayStation and PC, as well as with many video games on the market. The presentation was supported by athletes of the stature of Cisco García and Gema Hassen-Bey.

The simulator can be adapted in a variety of ways, fitting a wheelchair, with pedals, without pedals, steering wheels with cams that replace the pedals, steering wheels with displaced rim, changing heights, distances, etc.



Price: starting at 990€ (various models available)

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# OWO Game

Peripherals



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OWO GAME is a device that allows you to add the sense of touch to the world of video games through a jacket.

This haptic jacket is customisable, as it is made of lycra and can be adapted to the physical characteristics of each user, is wireless and adjustable in intensity.

Its batteries last for eight hours, the console connection is over Bluetooth and it has constantly evolving catalogue of over 30 sensations.

Given the benefits that the ONCE Foundation detected in the characteristics of the OWO Game haptic jacket, both entities started to work together to include an accessible video game in its catalogue. This video game is called Axe Thrower VR: 'Put yourself in the character's shoes and test your skill by throwing axes at the targets that appear around you, completely in virtual reality.'

Price: 499€



Get the most points before the round is over!  
This is a fully accessible experience, available on Android and compatible with the OWO's haptic jacket sensations.

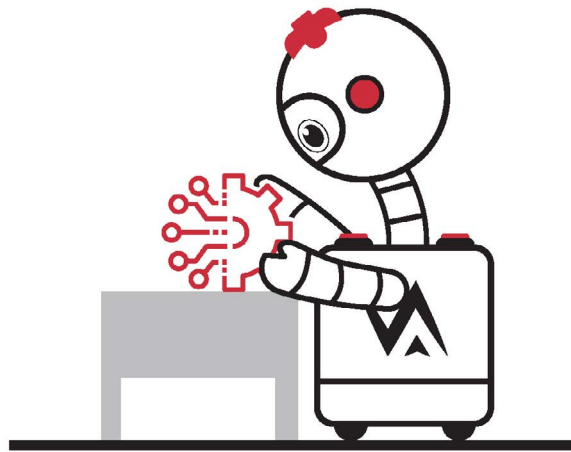
**NOTE:** The Axe Lance VR game only works with Virtual Reality (VR) glasses.

Both companies have held several workshops with the jacket and the Axe Thrower VR game and continue to look for synergies to explore new avenues for collaborations in the future.



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# The importance of 3D printing in hardware accessibility



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According to Autodesk, 3D printing generates objects by adding material to layers that correspond to successive sections of a 3D model. The most commonly used materials for this are plastic and/or metal alloys, but this process can work with practically any element (from concrete to organic fabrics).

Within the world of video games, 3D printing offers a wide range of accessories that help some users to play either with a completely new peripheral or with accessories that fit the different companies' existing conventional controllers.

Some include 100% customised mice, joysticks adapted for different types of controllers, adapters, different sized push buttons, click assistants for joysticks, add-ons for using the controller with one hand or the extension of controllers with a larger version.

3D printing allows society to build (at a very low cost) anything it is capable of devising, freeing it from dependence on third parties for an object or support product. If you can imagine it, you can create it and you can use it, which opens up endless possibilities for creating peripherals so people with disabilities can play video games on different consoles.





In the images above you can see some of the peripherals created at the ONCE Foundation by Luis Rodríguez Pedrejón with the help of CEAPAT and Móstoles Makers, respectively.

**NOTE:** You can discover more peripherals on the market or those designed in 3D printing, downloading many of them for free at [ga11y.fundaciononce.es/perifericos](http://ga11y.fundaciononce.es/perifericos) or in the support products section of Accessibilittas, ONCE Foundation's accessibility reference portal.







**This is not just for people with disabilities, accessibility is something for EVERYONE. Promoting inclusion in video games is our responsibility, and here begins your journey to help us achieve it.**

**Colorblind mode activated.**



**\*Screen reader activated.**

**Self-description: The scenario is a meadow filled with lush trees, there is a red car on the left...**

**Control customization:**

**▶ Co-pilot**

