Author Hub.

Image Descriptions
and alt-text

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What Are Image Descriptions?

Image descriptions are pieces of text attached to an image to describe that image for those who cannot see it. It is often called 'alt-text' (alternative text) as it acts as a textual substitute for the image, although image descriptions actually come in two forms: alt-text and long description:

- Alt-text: this is a short description of the image only (maximum 250 characters).
- Long description: a longer description that is required in some cases. This must be provided in addition to alt-text. This is used for more complex images or images that require more explanation. Not all images need this. There is no character limit but brevity is likely to be more useful for the reader. Very long descriptions can make it difficult to visualise the image.

If you have a long description, your alt-text must end with the wording 'See long description.' to alert the user to its existence. This is included in the 250-character limit. Our supporting form provides further information on when a long description should be provided.

How Are Image Descriptions Used?

Users of our digital products who are visually impaired or have a print disability can use a screen reader. When the screen reader comes to an image, it reads the alt-text, which describes the image for the user. You may also hear this called 'text-to-speech'.

Image descriptions are used in digital formats only and are not generally visible to users. The alt-text will, however, appear if the image cannot be displayed, for example due to low bandwidth.

Alt-text is usually always read by the screen reader, whereas users can choose to skip long description. This allows the reader to hear the alt-text and then decide whether to listen to the full long description or not.

When writing image descriptions, please note that alt-text is only available in 'plain text'. This means that structured elements such as

bullet points, lists and tables, and elements with special characters, such as complex equations, cannot be used. They can, however, be used in the long description.

Why Is This Required?

Image descriptions enable a non-sighted reader to access the same information and understanding as a sighted reader. New legislation mandates that newly published content must incorporate accessibility features. This applies to the digital versions of your work.

Alt-text for each image increases the accessibility of the digital product (see exceptions below). This allows fair and equal access to your work, widens the number of people able to engage with it and ensures it complies with accessibility laws. This includes anything captured as an image, e.g. diagrams, graphs, photos, illustrations, and maps, including in-line images (such as characters that cannot be captured in Unicode so need to be presented as an image).

As the author, you are best placed to describe the images and non-text content in the context of the discussion. Writing the descriptions yourself also allows you to keep control over your content. When a third party writes image descriptions, there is a chance that they may misunderstand or misconstrue your work.

For edited titles, the volume editor is responsible for ensuring all contributors provide suitable image descriptions. Contributors are responsible for the accuracy of the descriptions.

Providing image descriptions is a requirement for final submission. We cannot proceed without this. Authors are responsible for the accuracy of their image descriptions.

Do All Images Require Descriptions?

Every kind of image requires alt-text. This includes anything captured as an image, e.g. diagrams, graphs, photos, illustrations, and maps, including in-line images (such as characters that cannot be captured in Unicode so need to be presented as an image), plus other media like video and audio. The exceptions are:

- An image that is purely decorative. This means it does not further the text in any way and the reader would not miss anything without it. (Note: consider removing images if they are not necessary.)

- The image, or its content, is clearly described in the surrounding text or caption and any alt-text would simply be repeating this information (please note that the description must be effective for a non-sighted person). In some disciplines, such as STM subjects like medicine, detailed captions are common and may mean that it is not necessary to provide alt-text for many images.

You will need to indicate when these scenarios apply when supplying your alt-text in the form. Boilerplate alt-text will be added to these images to indicate that they are decorative or already described.

Consider making your captions more detailed so that they fully describe the image. You then will not need to create a separate image description.

NOTE: Cover images do not require image descriptions.

How to Submit Your Image Descriptions

You must provide your descriptions as part of your final submission alongside your manuscript.

Word submissions

You should provide your image descriptions in the Image Descriptions Submission Form on Author Hub (note there are two forms, one for Word titles and one for LaTeX titles).

You should use the form to choose the type of description each image needs, and indicate those that do not need a description added (because they are decorative only or already described in the text). You should then add your alt-text (and long description where needed) in the relevant columns. If the long description for an image cannot be displayed properly in the form, or is very long, you can write it in a Word document instead and state the name of the document in the form. More detailed instructions can be found in the form.

If an image has a data source (e.g. the data for a graph) this should be indicated (and linked out to where appropriate) in your manuscript as usual – this does not need to be included in your image description.

We will not be able to start production until all files are received.

LaTeX submissions

You should provide your descriptions as part of your final submission by writing them directly into your LaTeX code and use the form on Author Hub titled 'Image Descriptions Submission Form – LaTeX titles' to choose the type of description each image needs, and indicate those that do not need a description added (because they are decorative only or already described in the text). This is required to ensure the final file is properly tagged. Please see our 'Image Descriptions – LaTeX Titles' guide for instructions.

Please note that your image descriptions will be checked and edited during production to ensure they are suitable. The final copy will be provided to you with your proofs for you to correct factual errors and typos only. The accuracy of image descriptions is the author's responsibility so please ensure you check them carefully.

Image descriptions are not included in your manuscript's word count.

How to Write Good Image Descriptions

Image descriptions should be a clear description of the image and should not evaluate or interpret the image: this would be done in the igure caption and main text. The description **should not repeat the caption.** It should describe the image in the context of the surrounding text. It should contain only information that is in the image.

The description is heard, not seen. Imagine describing the image to someone over the phone. Image descriptions should allow a non-sighted reader to get the same value out of the image that a sighted person would.

It might be useful to ask yourself the following questions:

- What is happening in the image, and why?
- What is the context of the image? Why was it included?
- What is the focus of the image?
- What information in the image is important?

GUIDELINES	
Guideline	**Comment**
Limit alt-text to a maximum of 250 characters. Long description should be used when more information is required.	Image descriptions should be succinct and provide only the information required to describe the image and provide context where needed. If you need long description as well as alt-text, this should be indicated in your alt-text by finishing it with the sentence 'See long description'.
Be cautious when using characters or symbols that are not read accurately by all screen readers.	Please see the symbol guide below. Please also note that italics, bold, underlining, subscript and superscript will not be indicated by a screen reader.
Keep sentence structure simple and keep it brief.	For clarity, keep sentences and punctuation simple. Avoid parenthetical statements as the punctuation marks, such as brackets and dashes, can result in interruption or ambiguity.
Summarise first.	Start with a concise summary of the image, then add details as needed. When describing a graph or diagram, start by outlining its structure so the reader can picture it.
You do not need to start with "an image of …" or "a picture of…"	Screen readers announce images to their users, so there is no need to repeat this, unless it is useful to state the kind of image, e.g. graph, diagram, photograph, map.
For charts, graphs, and diagrams, include the type of diagram.	For example, 'A bar chart depicts…' or 'A flowchart of…'
Write out any relevant text in the image.	You can omit anything unnecessary.

Do not write words in capital letters.	If a word is comprised of uppercase letters then screen readers will read each capital letter separately, as if it were an acronym.
Context is important. Why did you include this image?	The same image may have a very different description in two different contexts. For example, the description of a photograph of a group of people may focus on very different things in a fashion book and a history book.
Don't interpret or analyse.	Describe what you see only.
When describing images of people, describe characteristics where relevant, e.g. gender, race.	This can be particularly important in medical titles.
Consider your audience.	For example, a title aimed at fellow researchers may require a different level of description of images than one for students.
Finish with a full stop (or question or exclamation mark).	This causes the screen reader to pause, indicating the end of the description, before moving on.
For groups of figures (with one caption), each individual image must have alt-text but you can decide whether they all need long description.	If long description is needed, you can either provide it separately for each image, or one description for the group.

Diagrams and Graphs

All diagrams and graphs require alt-text, and usually long description too. It's important that this conveys the same meaning that a sighted user can draw from the graphic. Alt-text is not required, however, if the data/information is fully described in the text, and the graph or diagram is just a visual representation. It may help to use a table or bullet points to describe a more complex image. Note that these can only be used in long description, not alt-text.

Diagrams

- State the kind of diagram, e.g. flowchart, lifecycle diagram, timeline. However, you don't need to describe the appearance of the diagram (e.g. blue boxes) unless relevant. Describe colour where needed (e.g. if different colour lines represent different things).
- Start by describing the structure of the diagram, e.g. stating how many pathways there are.
- Approach tree and hierarchical diagrams in a logical, linear way, going from left to right, top to bottom. For example, 'the first level shows X, the second level shows Y'.
- Sometimes, just a summary of the diagram will do. Other times, each part of the diagram will need to be described. Ask yourself how much the reader needs to know to get the same information as a sighted reader.
- Flowcharts, linguistics trees and similar diagrams can be described using numbered or nested lists showing the different options, for example 'back to X', 'forward to Y', 'leads to Z'. Multiple lists may be needed if there are different starting points or pathways. See an example of this in a linguistics tree below.

Graphs

- State the kind of graph, e.g. bar chart, line graph.
- Start by giving an overview of the graph, e.g. the labels and scales of the x and y axes and the number of categories where appropriate (e.g. for a bar chart).

- Include relevant data points, trends and labels.
- Sometimes, just a summary of the data will do. Other times, the reader will require all of the data – this can be placed in a table or in bullet points in the long description.
- Sometimes, rather than going into detail on the data, it can be more helpful to describe the trends in the data in a graph – for example, for a scatterplot graph, you can explain where the points are highly concentrated and where they are not.

– For more guidance and a range of useful examples, please consult The DIAGRAM Center: http://diagramcenter.org

Character and symbol guide

Not all screen readers are the same and the symbols they are able to read differ. Below we list symbols that are safe to use, and those that should be used with caution when writing your alt-text.

Symbol names	Symbols	Comments
You can use these symbols: they are treated consistently and they are safe to use		
Ampersand, at symbol, forward slash, major currency symbols, percentage sign, asterisk, degree symbol, basic fractions	& @ / £ € ¥ $ % * ° ½	These symbols are always safe to use.

Maths symbols: plus, minus, plus or minus, divided by, multiplied by, equals, not equals, approximately equals, less than, greater than, less than or equal to, greater than or equal to, sum	+ - ± ÷ × = ≠ ≈ < > ≤ ≥ ∑	These symbols are always safe to use. More complex equations may not display correctly and should be avoided in image descriptions.
You can use these symbols: they are not treated consistently, but they are safe to use		
Period, comma, colon, semicolon, question mark, exclamation mark	. , : ; ? !	These symbols could be read aloud, or they could be indicated by a pause. The latter treatment means their purpose may not always be explicit.
These symbols are treated inconsistently and they may cause ambiguity – use with caution		
Brackets, quotation marks, dashes, ellipses	() [] “” ‘’ - – …	These symbols could be read aloud, or they could be indicated by a pause. In some cases, they are ignored. The latter two treatments mean their purpose may be missed or may not always be explicit. Alternatives should be used where possible.

For further information on image descriptions, please see:

www.w3.org/WAI/WCAG21/Understanding/non-text-content.html
www.w3.org/WAI/tutorials/images
www.wcag.com/blog/good-alt-text-bad-alt-text-making-your-content-perceivable

Examples

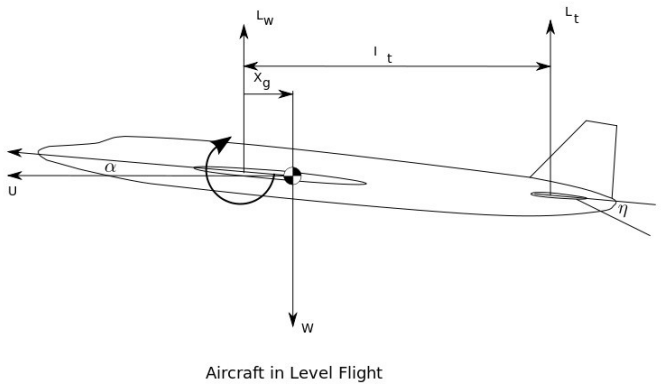

Figure 1.1 Longitudinal control in an aircraft.

1. **Alt-text:** Aircraft in level flight diagram showing forces and angles. See long description.
2. **Long description:** A line drawing depicts an aircraft in level flight, angled upwards, with labeled force vectors and measurements. Lift from the wing (Lw) and lift from the tail (Lt) are shown as upward arrows. Angle of attack (α) is displayed by a thin line angled upwards relative to the aircraft and labeled (u). Tail setting angle (η) is shown at the back. The wind vector (w) is directly underneath the aircraft. The distance from the wing to the center of gravity (xg) and the distance from the center of gravity to the tail (lt) are shown. A black circle in the middle indicates the center of gravity of the aircraft.

Figure 1.2 The position and velocity visualized for a double integrator.

Alt-text: This diagram shows a linear progression with four circles representing states X0, X1, X2, and X3. Arrows labelled V0, V1, V2, and V3 connect each circle and indicate the transitions between states.

No long description is needed.

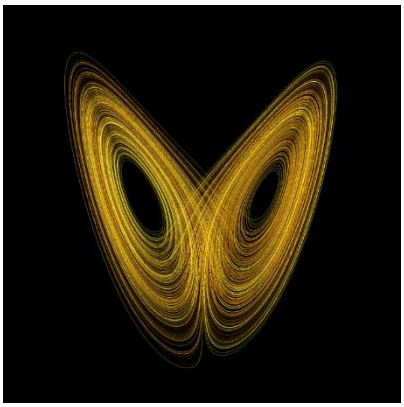

Figure 1.3: Lorenz attractor

Alt-text: A rendering of a chaotic system that forms a symmetrical, three-dimensional shape resembling a butterfly or a figure eight. Its structure is created by numerous looping lines that never intersect, giving it a complex and dynamic appearance.

No long description needed.

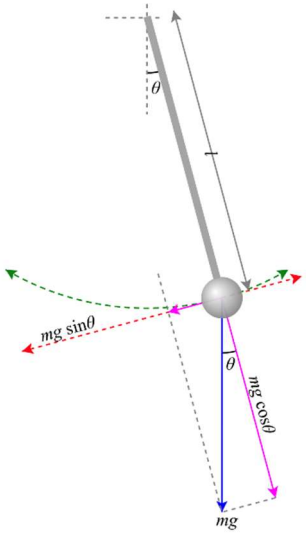

Figure 1.4 A pivoted massless rod connected to a point object with mass m. The point object is to subject to gravitational acceleration g.

1. Alt-text: Pendulum diagram showing force vectors: gravity (mg), mg cos θ, and mg sin θ, with angle θ relative to the vertical. See long description.

2. Long Description: Diagram of a simple pendulum illustrating the forces acting on the pendulum bob. The pendulum consists of a rod suspended from a pivot point at the top. The pendulum is at an angle θ from the vertical. At the bottom of the rod is the pendulum

bob, and force vectors show the force due to gravity (mg) acting downward, and mg cos θ along the pendulum rod towards the pivot, and mg sin θ, tangent to the arc of the pendulum's swing. The angle θ is shown again, where the vertical line from the pivot meets the perpendicular line to the pendulum bob.