

Authors who have videos and/or audio clips that they wish to submit with their article are greatly encouraged to include these within the body of the article.

This can be done in the same way as one would a figure or table; by referencing the multimedia content and noting in the body text where it should be placed, with its associated caption.

Note:

Since video and audio cannot be embedded in the print version of the journal the author should provide text for both the electronic and the print version for the portions of the article that reference the multimedia content.

All submitted files should be properly labeled so that they directly relate to the file's content. This will ensure that the files are fully searchable by users.

Video, Audio clips as Supplementary Data

If the content being submitted is truly **supplementary**, as in - not essential to the content of the article or only of supplementary interest to the reader, it can be included as **Supplementary Content**.

Supplementary Content is accessible only electronically via an active link in the article. It will be an **e-only** Appendix section after the article references.

Note:

Multimedia files included only as **Supplementary Content** will be placed as a footnote at the bottom of the first page of the print and PDF versions of the manuscript without specifying what it is. As this drastically reduces the number of people who interact with the content, it is preferable for the author to consider placing this content in the body of the article.

Supplying thumbnail images

For videos, authors should choose a relevant frame still (thumbnail) from the actual video clip that they feel is representative of the content of the video. This will be used as an image that ScienceDirect users can click on to start playback of the video. This should be done at the time of the initial submission of the file to ensure a smooth workflow through production. The still image should have the same pixel dimensions as the source video file.

For audio clips, authors can optionally include a thumbnail image that they feel is representative of the content of the audio clip.

For example, a photograph of a bird could be used for a sound clip of bird song.

Elsevier preferred specifications

To ensure that the majority of potential users are able to access, view and playback the data, Elsevier recommends the submission of material in the specified preferred formats.

AUDIO

Format	Extension	Details
MP3	.mp3	<ul style="list-style-type: none">• MPEG-1 or MPEG-2 format required• Highest possible quality required

If submitting audio, the following specifications are a guideline for authors/contributors

- Audio bit rate at least 128 kbps

VIDEO

Format	Extension	Details
MPG	.mpg	<ul style="list-style-type: none">• MPEG-1 or MPEG-2 format required• Highest possible quality required
MP4	.mp4	<ul style="list-style-type: none">• Acceptable video format• Highest possible quality required
Apple Quicktime	.mov	<ul style="list-style-type: none">• Acceptable video format• Highest possible quality required
Microsoft Audio/Video Interlaced Format	.avi	<ul style="list-style-type: none">• Acceptable video format• Highest possible quality required
Compuserve GIF	.gif	<ul style="list-style-type: none">• Expected to be non-photographic animation-based data

If submitting video with your article, the following specs should be used as a guideline:

- Frame rate: 15 frames per second minimum
- NTSC (4:3) size and frame rate, de-interlaced
- Video codec: MPEG2 or MPEG4 (MPEG4 preferred)
- Video bit rate: at least 260 kbps (750 kbps preferred)
- Resolution: 492x276 recommended
- Time: no more than 5 minutes

If the software used for the creation of your video(s)/animation(s) cannot deliver one of the above formats, then please save in one of the accepted formats. Any alternative format supplied may be subject to conversion (if technically possible) prior to online publication.

Recommended Upper Limit

For ease of download, the recommended upper limit for the size of a single video/animation file is 30 MB. When the size of a single file is bigger than this, some users may experience problems when downloading. Whenever possible, therefore, this limit should be adhered to.