



# Digital Editing and Sound Quality

*(from RAWIK Radio Aus- und Weiterbildung im Interkulturellen Kontext)*

## **Audio files**

Raw audio material (WAV format) takes up a lot of memory (80 minutes in stereo require around 800 MB). For this reason, the format MP3, which is a compression format, is often used.

However, if an audio file is too compressed, audible frequencies drop out. The level of compression is reflected by the bitrate of the MP3 file. The lower the bitrate, the greater the compression of the audio file. The bitrate is given in kilobits per second (kbit/s or kbps): 128 kbit/s, 192 kbit/s, 320 kbit/s etc. It is advisable to avoid going below a bitrate of 192 kbit/s.

For complex editing work (e.g. when producing a radio play), use WAV format if possible. Upon buying a recorder, take note of the formats and recording qualities which it offers. For instance, some devices can only record with compression and do not offer WAV format.

Audio CDs cannot simply be copied onto a PC. They have to be "ripped". In computer jargon, "ripping" means copying music or films from a data source onto the hard drive of a PC. Most audio programs offer "ripping".

Occasionally, recorders and computer programs use their own formats (i.e. proprietary formats, such as WMA or AAC). It is important to clarify which formats can be edited and played back at your radio station.

## **Digital editing**

For the production of items, a wide range of audio editing software is available (also as freeware: Audacity). They differ in terms of their options, structure and design. What they all have in common are the basic elements needed for editing original sound and music: normalisation, cutting, assembly, mixing, compression and storage. Simple items with your own text elements and original sound can be realised with a simple editing program on a single track.

As soon as background music, noises and jingles are used, two to three tracks are required. This allows overlaying of elements.

Important: do not only work visually. Check every editing step (i.e. every cut, every transition etc.) with your ears!

## **Audio editing workflow:**

### **1) Recording / importing and normalising**

- Record (careful: do not overdrive!) or open audio file.
- Normalise (adjust volume while observing the graphic display – recordings often sound loud enough through headphones).
- Store and name (make backup copy).

### **2) Cutting**

- Cut by marking and deleting (usually scissors icon and delete key). For this purpose, the zoom tool is essential (usually magnifying glass icon).
- The most recent step can be cancelled via "undo".
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### **3) Assembly**

- Bring elements together, alternating between several tracks.
- Adjust transitions.
- Balance the volumes of individual elements.
- Excerpts can also be moved or copied within an audio file or from one file to another by means of cut / copy and paste.

### **4) Mixing and storage**

Create a new audio file from the edited material and use compression if necessary. Save in the format prescribed by the broadcaster (usually WAV or MP3).

## **Tips**

- Even though hard drives are getting bigger all the time, audio files are relatively large, which means that if several people use the same computer for their radio productions, its memory is soon full. Ask where (and how much) data can be stored.
- Good preparation of the production on the PC saves a lot of work. In other words, before production begins, we should at least have a keyword plan or a script, i.e. a really precise idea of what the finished product should sound like. With the aid of this keyword plan, we can bring in the selected original sound recordings, speak the texts and finally mix in noises and music.
- When editing, it makes sense to use different tracks for arranging the material and, for example, to put original sound on one track and the presenter's voice on the next, as well as having separate tracks for atmospheric / background noises and music. Only when the arrangement and structure are right, does the fine editing take place. This is when slips of the tongue, pauses and places where people say "erm..." are cut out.
- However, pauses are sometimes necessary in order to retain a person's natural rhythm of speech. Here, the ear and the sense of rhythm are the most important aids once again.
- Finally, it is very important to listen to the item again from start to finish, paying attention to changes in volume, rhythm disturbances, and logic gaps.