

serTA Virtual Presentation

Digital Music for SCD

21st March 2021

Part 1 of 2

The presentation was led by Peter Loveland, and there were contributions from John Fletcher, Mervyn Short and Gerry Elliott. Part 1 is Peter's presentation while Part 2 has summaries of the other contributions to this workshop

Sound recording – a look back

The presentation started with a brief history of sound recording in which key developments and advances in sound recording were described, starting with the acoustic era (1860s), then moving on to the electrical era, the magnetic era, and then the present-day digital era. Images of some typical machines and devices of the various periods were shown.

How digital audio works

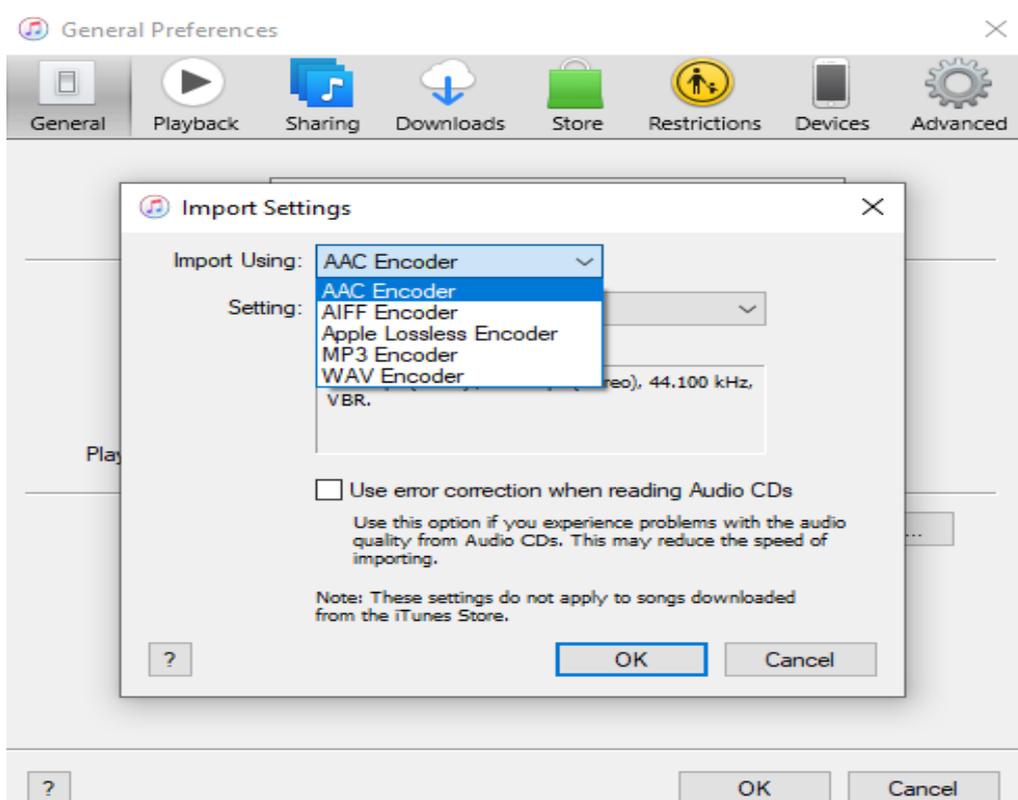
Details of how sound is converted from analogue to digital form were described. It was shown that digitisation of sound is accomplished by capturing, at a fixed rate, a rapid series of short 'snapshots', i.e. samples, of a specified size. Each audio sample contains data that provides the information necessary to accurately reproduce the original analogue waveform. Technical terms such as sample rate, bit depth and bit rate were described, as was the Nyquist-Shannon theorem, and aliasing.

The sound quality of CDs was compared with 'lossy' formats such as MP3 and AAC. Lossy compression techniques, which exploit limitations in human hearing, allow much smaller digital audio files to be produced. An MP3 file, for example, is about one tenth the size of the original CD-quality file.

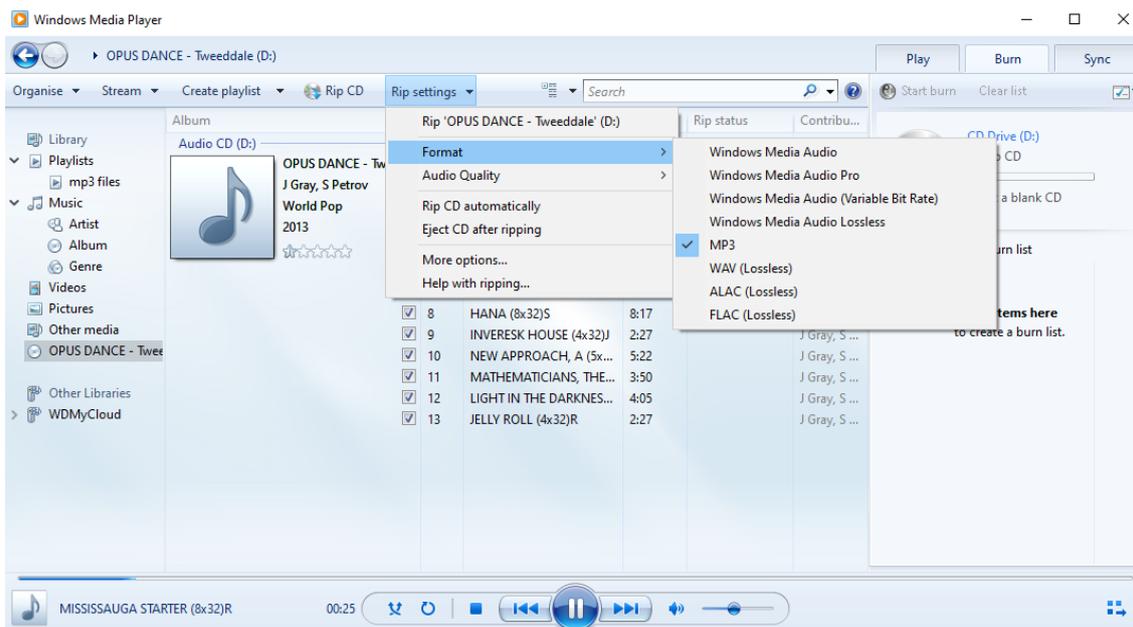
Sourcing and importing digital music

Some of the more popular sources of digital music for SCD were listed, including iTunes store and Amazon music, as well the RSCDS and Sunday Class websites. Digital music may be purchased in the form of complete albums, or separate tracks.

The process for importing music from iTunes was described, as was the procedure for ripping files using Windows Media Player 11 or 12.



iTunes screenshot: Choosing import settings



Windows Media Player screenshot: Selecting Rip settings

Gracenote and All Music

The Gracenote and All Music databases are music recognition databases which can automatically recognise a specific CD (eg, from which you wish to rip tracks), when the CD is inserted into your computer. For the tracks to be recognised, your computer must be connected to the internet.

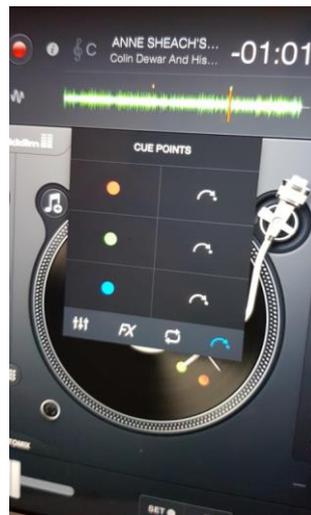
Devices and apps for playing music in class

For example an iPad, with the music app called djay installed, can be used to play music in class, but there are, of course, other options available to do this – for example, a tablet, smartphone or laptop, with some appropriate music app installed, or one of the so-called ‘DJ’-type devices which can play CDs and/or mp3 files on a memory stick.

Specific features of djay include quick and easy retrieval of a music track based on a particular search criterion (eg, track title, band, album, etc.), the ability to cue a track while playing another, tempo control and cue points. The latter two attributes are very useful features to have in any system.



An iPad with the djay app playing



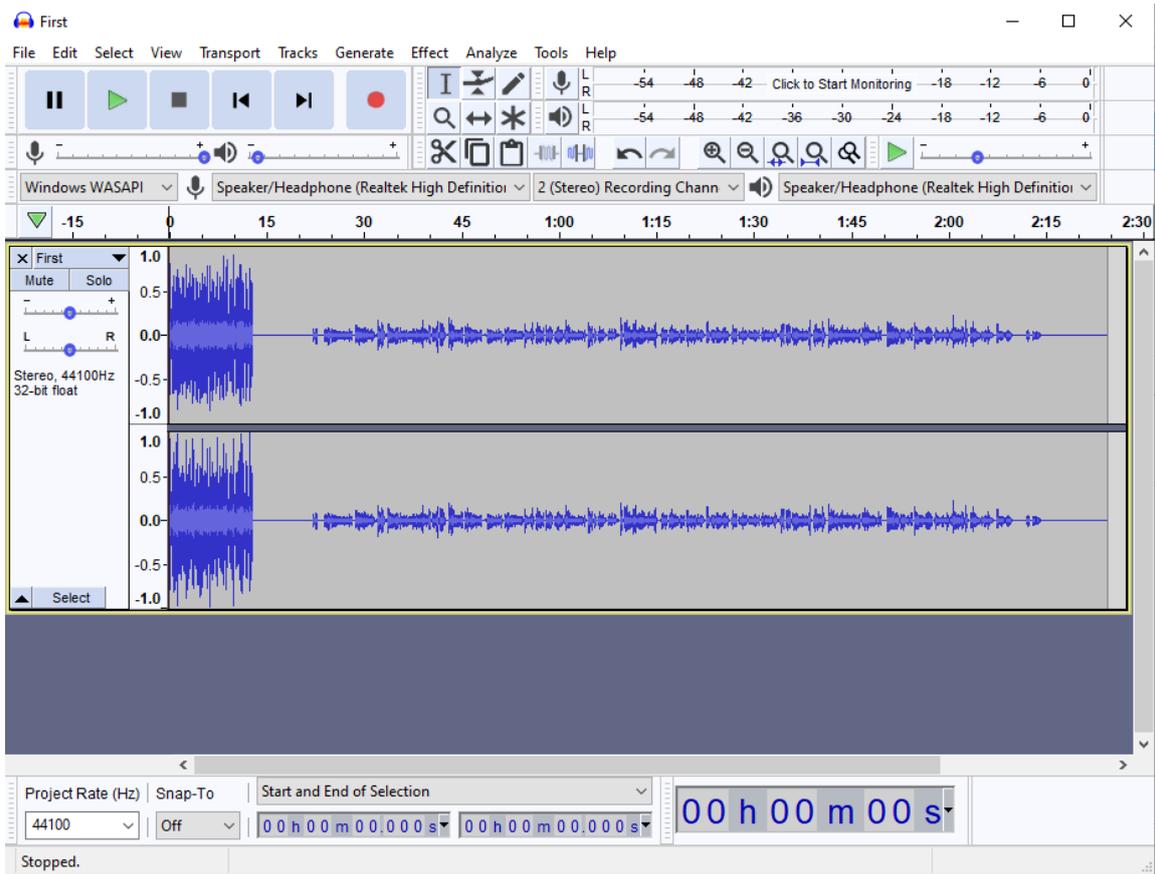
Setting cue points in djay

Backing up music

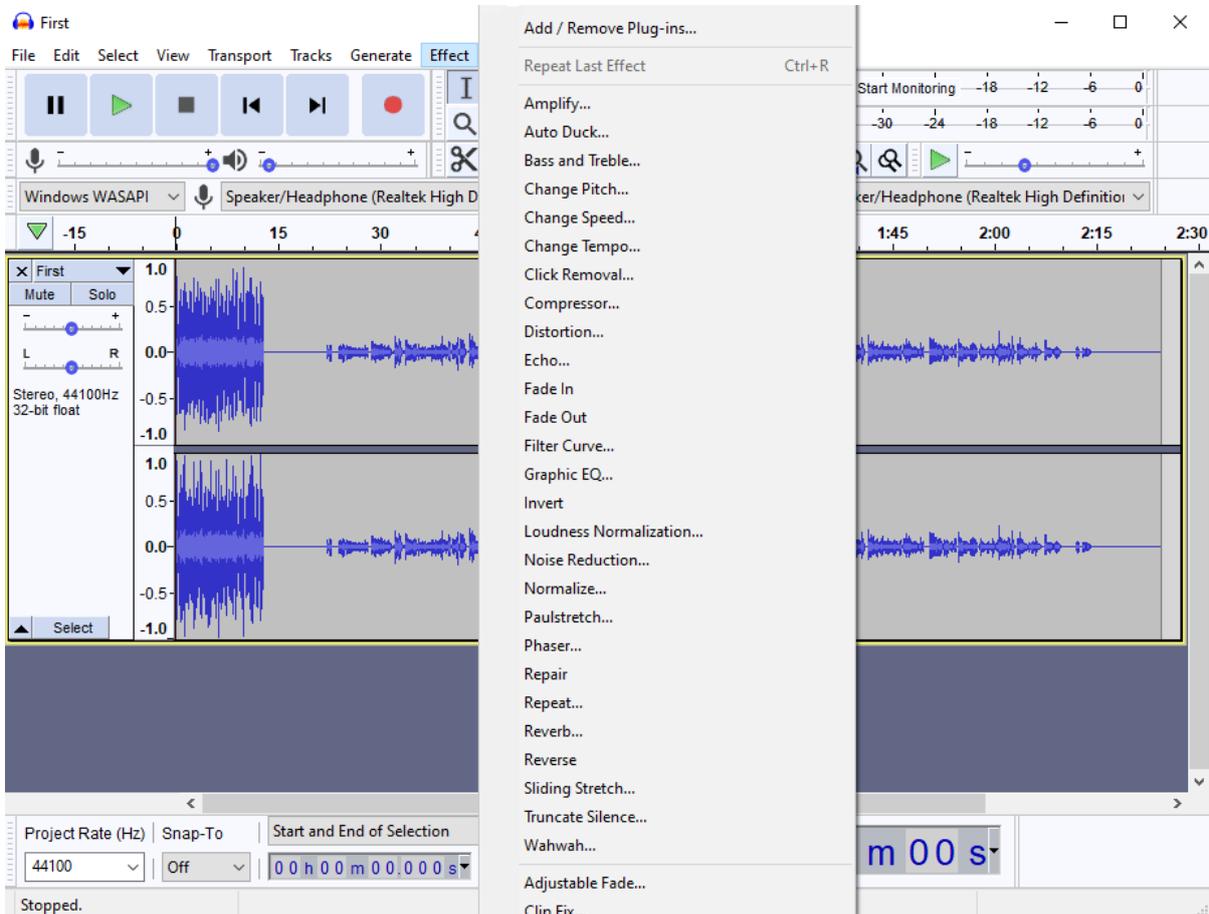
Having downloaded music, it is advisable to make a backup copy. Backups can be stored on various devices – for example, to an external drive or another iPad or device. In the case of iTunes, the settings can be configured to automatically backup your music to your iTunes library.

Editing music files

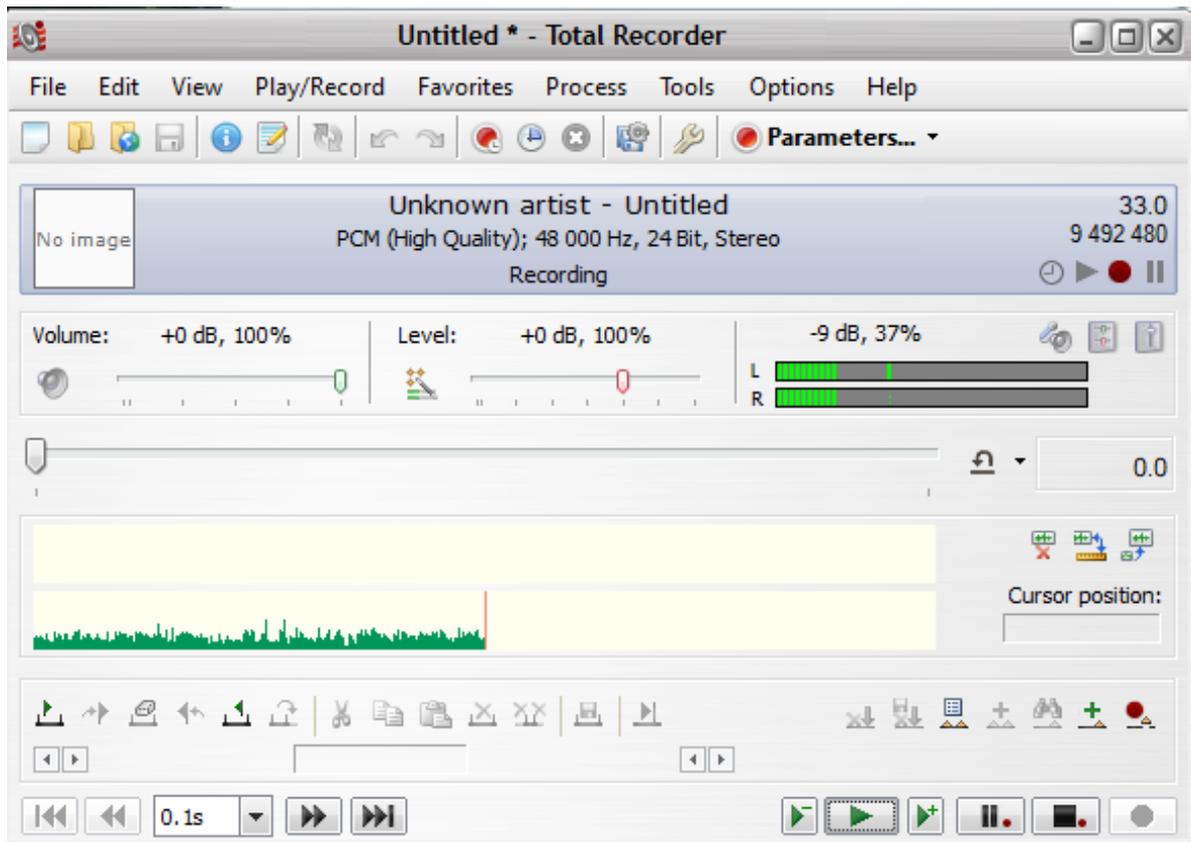
Audacity and Total Recorder are two typical applications which can be used for editing music – for example, you may want to increase, or reduce, the number of dance repetitions in a SCD music track, or remove clicks from a vinyl disc recording.



Audacity screenshot



Audacity screenshot: Effect settings



Total Recorder screenshot

Typical music systems

Various music systems suitable for halls and venues of various sizes were described and illustrated. For example, a fairly powerful PA system (eg, Yamaha Stagepas 400BT), used with an iPad and radio microphone, would be suitable for medium and possibly larger halls. A single-unit Portogram ('boom box'), for example, would be suitable for medium or smaller venues, and a Bluetooth speaker which includes a built-in rechargeable battery might be appropriate for small venues or those not near a source of mains power.

One of several different types of devices may be used as a music source, eg an iPad, Android tablet, laptop, or a purpose-built ('DJ'-type) device such as those manufactured by Numark or Gemini. Useful features to have on any music system would include tempo control, the ability to set cue points, and microphone input and mixing.

CD Music player with USB port, Bluetooth, microphone input, and audio inputs





PA system with iPad and radio microphone



Bluetooth loudspeaker



Typical 'DJ' devices

Music licensing

The RSCDS holds an umbrella music licence called TheMusicLicence, which is a joint venture between PPL and PRS that covers all UK Branches. This allows a Branch to play RSCDS recorded music via CD or a hired band in any capacity and in any venue.

The RSCDS website includes useful information on music licensing. For further information, visit <https://www.rscds.org/learn/music-resources/music-faqs> or contact PRS for Music (which only covers UK related matters) on 0800 068 4828.

Questions and General Discussion

Questions from the floor were received and answered, and in the general discussion members were able to speak about their own experiences with digital music.

Peter Loveland March 2021