**Magix Sequoia V10**

It has origins that go back at least as far as most of its rivals, yet it is not nearly as well known as it should be. **ROB JAMES** says this digital audio workstation covers all the bases yet manages to add a flavour and additional feature set all of its own.

Those of you with an arboREAL bent will know that the Sequoia is the name given to an ancient genus of trees. The best known is the giant Sequoia, *Sequoiadendron giganteum* to give it its proper name. A very large and long-living tree, it can survive for more than 3,000 years and grow to a size only matched by the giant redwood. In the digital audio world any DAW that makes it to major version 10 has more in common with such a tree than you might imagine.

For a DAW to survive and thrive it must grow abilities and features to serve a wide range of applications, from music production and mixing to sound for picture and the digital radio production chain. All the diverse requirements of these segments and more must be addressed competently and effectively. The net result is that although the majority of current DAWs are superficially similar there is the possibility of a major learning curve if you intend to switch. For professional use the devil really is in the details. With PCs more powerful than ever before and storage prices at an all-time low it is no great trick to record lots of tracks and mix them. Integrating the workstation into existing infrastructures and work-flows is quite another matter.

The evolution of Sequoia goes all the way back to the beginning of the PC audio workstation era. The original developers were two graduate engineers, Tillman Herberger and Titus Tost, who began experimenting with digital audio processing in 1983. They released their first audio application, a sample editor for the Amiga, in 1988.

Unusually for the time, this was capable of processing in 24-bit resolution. Soon after, the first multitrack version of Samplitude for the Amiga was released and the successful Red Roaster CD mastering package shared the same heritage. In 1993, Samplitude was ported to Windows in an 8-track multitrack version and has been continuously improved since and developed into the high-end version, Sequoia.

Marketed under the Magix banner, Sequoia Version 10.2 has arrived and at Euro 2974 (inc VAT) has all the standard DAW ingredients. It can record, mix, edit and master, in fact everything up to and including Red Book standard CD burning and even DVD-A mastering and burning. There is support for VSTis and MIDI sequencing so it is perfectly possible to record and produce a music project all the way to final output in the one box. Sequoia is also adept in the fields of sound to picture and audio production. ASIO and MME/VDM drivers are supported, but ASIO is vastly preferable if the soundcard can cope.

As you would expect of a DAW at this level of maturity and price point there are numerous features applicable to highly specialised activities that are likely to be of little interest to the casual user but will be highly prized by those using the software to perform specific tasks on a daily basis. For example, a built-in FTP client is included. Although it is really no great hassle to use an external client, the tight integration means vital seconds can be saved when uploading a news item. It also means one less bit of software to learn and maintain.

For sound to picture exponents, video support has improved dramatically. The video codecs have been upgraded and there is much tighter integration with the Magix Video Pro X NLE, including surround speaker settings FL, FR, etc., direct from the EDL. Video player options are limited, and this is a good thing. If a video player can play your files the fewer settings you have to make, the better. Aspect ratio, size and sync offset are the most significant adjustments and pretty much all you want to deal with on a day-to-day basis. You do not want or need to go through endless pages of settings if all you wish to do is produce an audio track to picture. With the Sequoia approach it either works or it doesn’t and the variety of files it can deal with is impressive. I attempted to load a VOB file (the multiplexed audio and video file found on DVDs) with little expectation of success. Not only did it load and play faultlessly but, for an inter-frame compression format, the quality of scrub and fluidity of working are impressive. I was delighted to discover the option of replacing the audio in AVI files.

A Video recording function enables simultaneous recording of audio and a video track. Any capture device installed on the system and available to Windows can be used. This can be useful when recording a live stage performance so you have a reference video of the event to mix against. You can also extract and replace audio in AVIs and a variety of other formats.

On the other hand, there are no direct 9-pin RS-422 remote capabilities and SMPTE support is ultimately a translation into MTC. It is arguable that these are legacy technologies but there are still plenty of workflows that require them for laybacks to tape etc.

There are ways of working around this but they may be less convenient than a fully supported built-in solution. Also, there is no in-built support for project interchange formats such as AES 31, XML or OMF.

Transport reverse play is a little curious. Most DAWs that support this use a keyboard shortcut such as Ctrl + Space. Sequoia can play backwards but it does this by using a change playback direction command. This is buried in a sub-menu although it is easy enough to assign a keyboard short cut to it.

Up to 12 Channel Surround is possible, which is impressive. However, there is a snag. Sequoia can only operate in surround or in stereo i.e. you cannot produce simultaneous masters in stereo and surround. Magix has attempted to ameliorate this by making it relatively simple to switch between stereo and surround modes while retaining settings but, if concurrent surround and stereo versions are a regular feature in your workflow, this needs looking at carefully before deciding to take the plunge.

A new cleaning and restoration suite has been added. Available in real-time and off-line (i.e. rendered) the processes included are: a deClicker/ deCrackler, a deClipper and a deNoiser with ‘Noise Print Wizard’. The DeNoiser is especially good and much better than its predecessor. A huge amount of control is available but it works well on the default settings. Adding an instance of the ‘Brilliance Enhancer’ helps avoid the rather lifeless effect denoising often produces. A Spectral cleaner is also on offer and this, like the alternatives, works as a destructive effect, off-line, although there is of course a built-in option in the dialog to create a copy. You can preview the results before committing. The interface is tidier than most and good results are relatively easy to achieve.

An overview area shows all the objects in the entire project and assists navigation especially in large projects and all the tracks inputs and outputs are shown as a matrix in the new routing manager. A VIP (Virtual Project) project can now be up to 168 hours long and RIFF64 is used when recording to NTFS format drives, which removes the 2Gb maximum restriction. On PA152 format drives files over 2Gb are split automatically.

There are lots of Sequoia/Samplitude specific short-cuts and productivity aids for power users. Cuts can be transferred from one track to many. This is of considerable benefit when you edit a stereo guide track on a low power laptop and later need to conform the multitrack master to this.

Apart from the familiar track-based editing model Sequoia also has Object-based editing and automation.
You can edit in the usual fashion — in the VIP, audio media source files can be non-destructively split, copied and pasted as many times as you like into as many objects as you might wish. Each of the resultant objects can be edited with individual fades and also have effects applied, such as equalisation, time-stretching, pitch-shifting and DirectX or VST plug-ins. The Object Editor window gives real-time access to every object setting, including stereo panning and surround panning to the surround master or bus.

In the 'Take Manager/Take Composer' you can create, organise and edit several takes at once. The 'Take Composer' enables cutting out of the best bits and patching them together to form a new take. Source/Destination editing is a highly developed feature. Not one I ever use, but for the people who need it, four-point, three-point and two-point editing is indispensable, for example, for creating a new project from one or several existing ones. To this end source and destination areas can co-exist on screen and enable viewing and play of source and destination tracks simultaneously and independently.

Another specialist feature is the Crossfade Editor. Rather than simply grabbing and pulling handles in the timeline the Crossfade Editor controls every parameter of a crossfade. Used in conjunction with Source/Destination editing, the Crossfade Editor enables precise editing of symmetric and asymmetric crossfades and various modes for independent or grouped moves of fades and audio material. Step size for all moves and nudge operations is customisable.

For music origination, ReWire enables other applications to be integrated and an eight-voice drum computer, Robota, is included with a step sequencer.

Other extras include a variety of good quality plug-ins, such as The Analogue Modelling Suite with am-pulse, am-track and am-phibia for dynamic editing and simulation of analogue circuits. The Vintage Effects Suite adds VST plug-in effects (Convex, Ecos, Filter) for audio editing. VariVerb Pro is a synthetic reverb used to create ‘classic’ and modern calculation-based reverb effects and the Realtime Room Simulator is a convolution reverb with a library of impulse responses and the ability to create your own from within the software.

Sequoia uses a technology Magix dubs the ‘Hybrid Audio Engine’. Naturally, this supports multiple cores/CPU. The idea is to combine a new low-latency engine with the higher latency original Sequoia playback engine in such a way that the user can use the combination most appropriate to the job in hand. The low latency engine reduces response times when there are a lot of track effects and enables live monitoring. On the other hand, the VIP engine increases DSP capacity at the expense of latency for complex object effects, auxes, and surround functions. The Hybrid Audio Engine is predicated on the ASIO driver model and is designed to produce lower latencies when working with software instruments and other plug-ins.

Selecting the Smart Dithering option means that dithering is only applied if the bit depth exceeds 16-bits or when the bit depth is changed. Dithering is not applied during silence. The well-thought-of POW-r dithering algorithm is also included. Latency is automatically compensated for throughout the signal flow including submix buses in addition to aux send buses.

Sequoia is claimed to be able to integrate with radio content workflow management systems such as DigaSystem. Audio files, including metadata, can be edited simultaneously while the audio file is being transmitted for immediate use. Sequoia projects can be created and managed directly from the Content Management System.

An unusual and desirable Samplitude/Sequoia feature is the Comparisonsics waveform display. This mode uses an algorithm patented by Comparisonsics to depict the audio object’s waveform in different colours. Dependent on the pitch (and additional parameters), a specific colour (hue) is calculated and displayed for each time segment of audio. Low frequencies show up in shades of blue while higher frequencies go through green and yellow to red. Tonal sounds are shaded in colour, while noise and atonal sounds are grey. With some experience you can consistently recognise characteristics of the audio that would be undetectable using a normal waveform display. Audio analysis segment size is user-definable with a recommended minimum of 50ms to ensure accurate colour calculation.

Despite the fact that the colour to frequency relationship seems completely back to front when compared with the colour spectrum to frequency relationship and all my previous experience, the extra information Comparisonsics imparts is very useful. There is also an audio search technique based on the Comparisonsics colours where you can search for audio similar or identical to a selected object and markers are placed automatically to enable rapid location of the points identified. After the search dialog is closed you can jump to the markers indicating identical or similar sounds with a mouse click, even when playback is in progress. In contrast to the Technicolor Comparisonsics waveform display, the rest of the user interface graphics are clean and quiet and all the better for it. A variety of hardware controllers are catered for via the Mackie HUI and Mackie Control protocols.

Sequoia is expensive when compared to other software-only solutions. But, if you want a professional solution with at least some of the ‘gotchas’ covered, some unique and desirable features and good support, then it makes a lot of sense.

Most important, like its sibling Samplitude, Sequoia sounds good, very good in fact.