

# CEDAR Retouch

Long regarded as one of audio's Holy Grails, the ability to remove 'accidental' audio events from recordings has finally come to pass.

Available only for SADiE systems, it's an essential for the cleaner-up's armamentarium.

ROB JAMES

**SUPPOSE SOME DEGREE** of modish ennui is inevitable after six years plus of writing equipment reviews. 'Oh no, not another mic pre!' syndrome for want of a better title. Fortunately, most new products have something innovative about them, sufficient to kindle interest if not excitement.

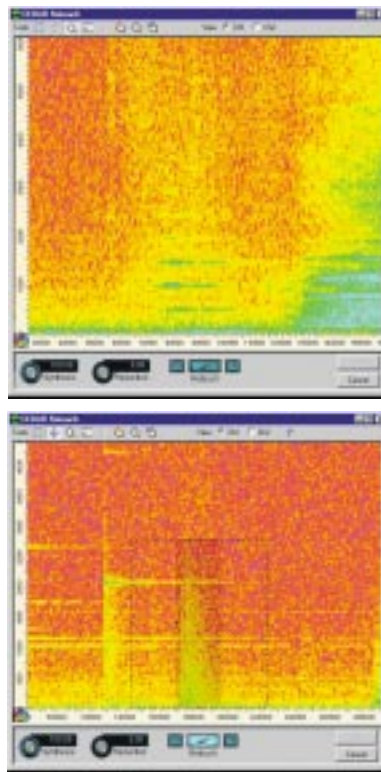
I've been playing around with noise reduction for as long as I can remember. From laboriously cutting clicks out of tapes, through simple analogue filters and dynamics, through Dolby, CEDAR and various other digital noise, buzz, click, crackle, and hum treatments. Many of these have turned out to be 'snake oil', others have delivered at least some of their promises. Until now, nothing has properly addressed problems such as chair creaks, coughs, mobile phones and similar, fairly long duration disturbances. Steep filtration introduces ringing and other artefacts, as do dynamics. So whenever faced with this sort of problem it was back to the razor blade, physical or metaphorical, or full bandwidth interpolation. All these techniques attempt to substitute alternative sound to cover the egregious noise and they all share the same defect. The original material including the desirable parts is lost.

Retouch offers a tantalising grail. It promises a means of dealing with this type of problem while retaining the wanted part of the original audio with minimal degradation.

Retouch is a 64-bit, 96kHz process operating on the

temporal and spectral content of a signal. The interface is graphical and not dissimilar in feel to a photo retouching application. The big step forward from earlier interpolation solutions is Retouch's ability to deal with narrow bands of the frequency spectrum. The clean, intuitive user interface is a big bonus with good use of context sensitive menus and keyboard shortcuts. The results of the first demonstration I witnessed were quite astounding. An orchestral recording with prominent chair creaks was rendered 'perfect' in a few moments with no evidence, at least to my ears, of any degradation. The operation was not only successful but it appeared painless and quick, thanks to the dexterity of the demonstrator.

I found Retouch easy to get to grips with on a superficial level. Within minutes of starting to play with it I was able to remove chair creaks and switch noises from commercial recordings. If all this sounds a bit too good to be true,



there are a couple of caveats. When I attempted to remove other noises it became obvious that considerable skill and experience is necessary if artefacts are to be avoided and, of course, there are things Retouch won't touch.

This is a non real-time manual process, which can be time-consuming, but, as with conventional editing, a skilled and practised operator will work at many times the speed of the casual user or novice. In commercial and professional terms, this may well be seen as a good thing.

There is as yet, no such thing as a panacea for audio maladies although Retouch gives the envelope a good nudge in the right direction. I would like to see a means of auditioning the result, without the necessity to 'write back' to SADiE. This minor quibble aside, Retouch delivers what it promises. It really can make the difference between releasing a track or not. In these circumstances the asking price of around UK £2000 is

positively reasonable.

Very, very infrequently something comes along that gets the adrenaline going the moment I see it. The big light goes on, 'bing' (*You can Retouch that. Ed*) and I can't leave it alone. Big, complex products, consoles or workstations sometimes have this effect, but usually it is something deceptively simple and elegant. This is the second time it's happened with a CEDAR product, the first was the DNS1000, now there is Retouch.

I would not be at all surprised to hear of people buying SADiE systems primarily to run Retouch. Anyone regularly dealing with problematic material has to hear what this can do to believe it. ■

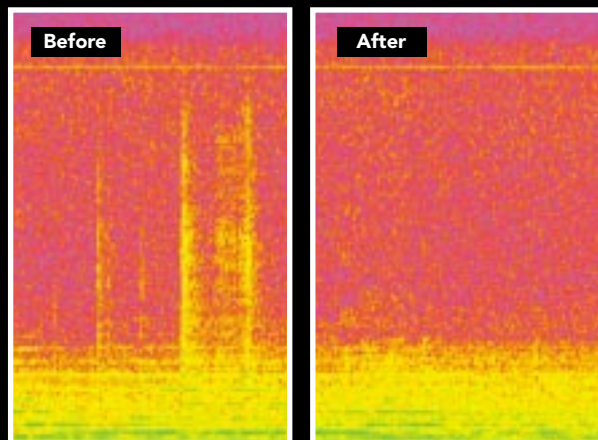
## Operation

Once a suitable candidate for treatment has been identified, the region editing function in SADiE is used to define the area that will appear in Retouch. This needs to be at least three times longer than the problem itself. Retouch is invoked with a single button press and opens with a spectrogram of the selection with frequency as the Y axis and time as the X axis. Colour denotes amplitude.

The colour can be adjusted until the problem stands out as much as possible from the wanted audio by grabbing the colour wheel and dragging. The Y axis scale changes into a band of colours, mapped against levels. Clicking and dragging with the Select and Zoom tool zooms into the area of the spectrogram you wish to concentrate on. Click and drag around the actual area for treatment with the Select Area tool, which now appears as a grey shaded box with two 'wings' of equal size either side. These wings denote the area that will be used as the basis for resynthesising material to replace the area containing the unwanted material.

The Synthesis knob controls the percentage of the original audio that will be replaced with resynthesised material from the wings. The Reduction knob specifies level reduction of the replacement, if any is required. Once the area is selected it can be adjusted by clicking and dragging handles with the Modify Area tool. For example, where a disturbance occurs immediately before a transient, or the start of a new note, it is obviously desirable to use only the wing before, increasing its area and reducing the other wing to zero.

Once satisfied with the settings, pressing the Retouch button starts the calculation. Auditioning the result requires hitting the OK button, which writes the region back into SADiE and closes the Retouch window.



### PROS

Excellent addition to the 'clean-up' arsenal; intuitive user interface; fast in skilled hands.

### CONS

No way to audition results inside Retouch; legends can be hard to read against psychedelic spectrum.

### EXTRAS

Retouch 6 shows an area defined for Retouching complete with 'Wings' (Colours chosen to show up the selected area).

### Contact

CEDAR, UK  
Tel: +44 1223 881771