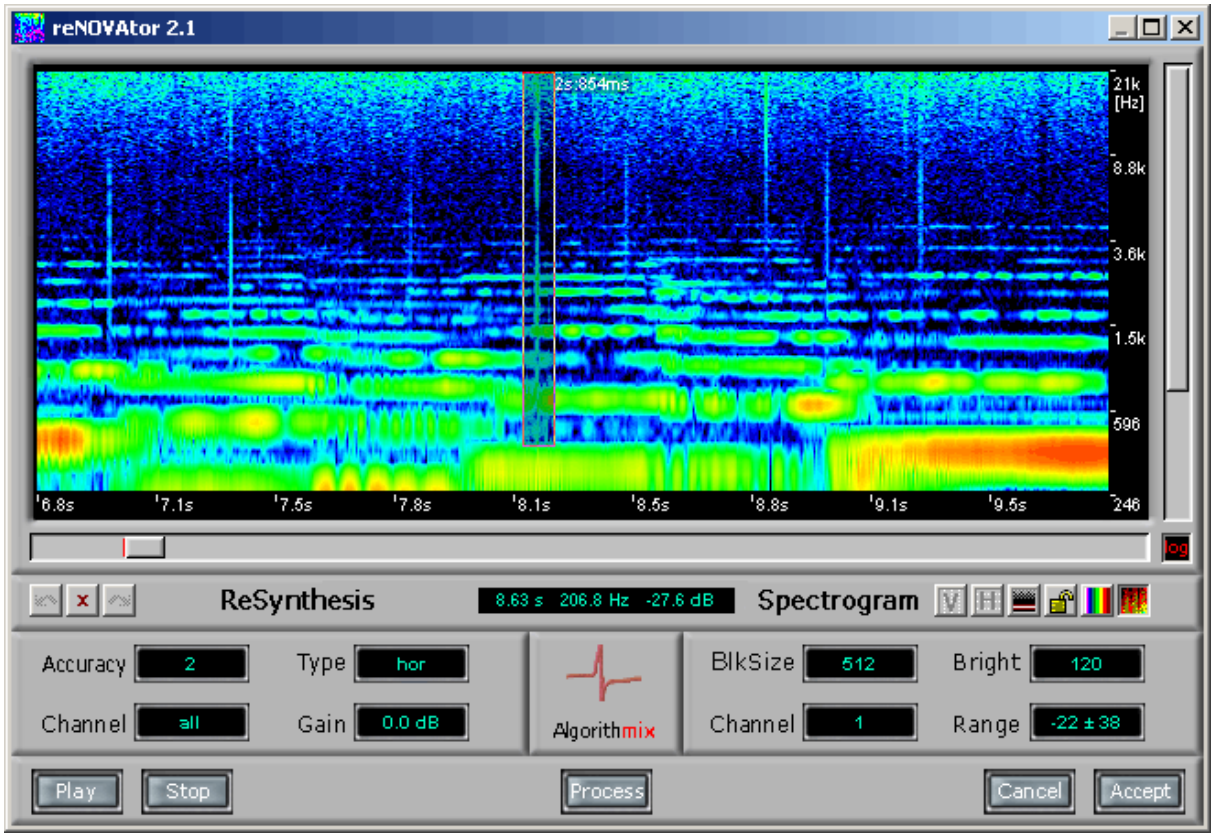
2. Preface

Imagine that during a music festival you recorded a unique live performance in a concert hall or church. After checking the recorded material in your studio before production and mastering you decide the recording was successful in general, except for a few annoying disturbances during some quiet passages: somebody's cough, a squeaky chair, the horn of a passing truck, a bell from the neighboring clock tower. In addition, despite the exceptional artistic interpretation there were a few significant errors: a loud scratch in the part of violin soloist and one too early tone in the brass section.

All this makes your recording unacceptable and, of course, the concert cannot be repeated. As an experienced tonemeister, you know very well that all traditional techniques and tricks fail when you try to remove the disturbances mentioned above. In such a situation any kind of traditional equalization or sophisticated editing methods is usually time consuming and causes discontinuities or at least audible changes in level and timbre of the desired signal and ambience. You will say “no way” and close the project.



That was yesterday. Today, we at Algorithmix® are proud to unveil the **reNOVAtor**™, our unique solution. In such hopeless situations, **reNOVAtor**™ successfully rescues problematic live recordings from audio disturbances and unwanted noises. You will be amazed by the high sound quality of the repaired section and how quickly it works.

Note that all spectral modifications in **reNOVAtor**™ are performed in the linear-phase domain. Therefore there is no unwanted sound coloration of the remaining material.

3. Overview

The **reNOVAtor**™ PlugIn allows localization, identification and very precise removal of unwanted audio events without affecting the audio material you want to keep. The removed sound is replaced by a signal re-synthesized from the surrounding material. The **reNOVAtor**™ does not make deep gaps in your sound track when eradicating a disturbing sound event. Rather, it's an exactly tailored hole in the spectral representation of the processed signal that can be removed and replaced. The interpolation may even be restricted to certain gain ranges within the selected area, which is very useful if only a certain part of the signal needs to be treated (e.g. one specific harmonic). The **reNOVAtor**™ window is fully resizable for increased accuracy and optimal compatibility with all screen resolutions.

Working with the **reNOVAtor**™ is easy and intuitive. The **reNOVAtor**™ loads the requested part of audio material you've chosen and analyzes it. The result is displayed as a 3D spectrogram with time on the horizontal axis, frequency on the vertical axis and amplitude of the spectral components color-coded. The color assignment follows the order of the rainbow: red and yellow for low energy; green and blue for middle energy; and finally purple and white for high energy. After getting some experience, this 3D spectrogram representation allows a good feeling for localization and identification of sudden unwanted acoustical events. The spectral area of interest can be precisely marked with a resizable rectangular window. An *Audition* button allows you to hear different parts of the processed signal.

4. Main Features

- up to 384kHz sampling rate, thus perfectly suitable for DSD post-production
- extraordinary results compared to any other cleaning method, due to selective treatment of spectral representation of the signal and not its waveform.
- enormous time-saving in repairing critical live recordings
- easy-to-learn identification and localization of unwanted audio events
- efficient removal of unwanted audio events and their replacement by signals re-synthesized from the surrounding audio material
- resizable and zoomable spectrogram window for sound repairing with surgical precision
- multiple selections of harmonics and automatic identification of tones and clicks
- audition of any marked area before and after processing
- multiple undo functions
- gain selective signal treatment
- different kinds of interpolation
- replacing one spectral region by the other (copy & paste)
- no audible changes in desired signal and ambience after removing typical discrete audio disturbances

5. Typical Applications

- removing unwanted noises like sneezing, chair squeaks, coughing, car horns, coins and keys falling down, ringing of a mobile phone etc.
- correcting instrumental tracks by removing scratches (guitar, violin), wrong notes, rustle of music sheets, breathing, lip-smacks and microphone pops of a vocalist, pedals of an organ
- restoring old recordings by removing scratches and dropouts
- cleaning up location records for film and TV from environmental noises