LEA Xtract Module for components separation

LEA Xtract is a new module for LEA 3.0 for sound components separation.

For acoustic expertise and for sound design applications, it is important to separate the various components of a sound to characterize acoustic phenomena or to evaluate the influence of each component on the overall auditory perception.

Through a simple and intuitive procedure, the user tunes one to three state-of-the-art algorithms, together or separately: denoising, tonal/partial tracking and extraction, transient detection and extraction. Several parameters are offered to control the algorithms and get the best result for components separation.

LEA Xtract easily extracts the sound of a turbo in an engine, the whine in a gear transmission, the shocks in a diesel engine, the tones of the turbine of an aircraft engine or simply denoise a speech record.

The limits are only fixed by your application and your imagination.

LEA Xtract Features

- Denoise a signal from a known background noise or from an automatically estimated noise.
- Extract together or separately from any signal tonal, transient and noisy components
- Conservative approach: summing up all the components leads to the original unmodified signal
- Mix, design and listen every of these components
- Automatic batch processing for a set of WAV files

Applications

- Target sound design
- Separation of sound sources
- Sound analysis
- Troubleshooting

LEA is used by many famous industries like RENAULT, VOLKSWAGEN, HYUNDAI, CHRYSLER, NISSAN, SUZUKI, RENAULT TRUCKS, AIRBUS, AIRBUS HELICOPTERS, DASSAULT AVIATION, SNECMA, SNCF, RATP, STX FRANCE, VALEO, HUTCHINSON, THALES, ORANGE, MIZUNO, SONY, PIONEER.
LEA Xtract automatically separates the following components from a signal:

- **Noise**
  Broadband stationary component of the sound
  *Ex: background noise, rolling noise, wind noise, etc.*

- **Tonals**
  Sinusoidal components
  *Ex: harmonic or pseudo-harmonic components of a sound, isolated tone, etc.*

- **Transients**
  Short duration and time-localized components of a sound *Ex: shocks, clicks, note attacks, etc.*

- **Residual**
  Any component of a sound that does not fit to any of the previous models