

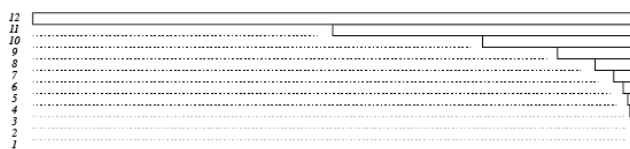
## ISOSTEM Loudness Ranger

### Finest loudness adjustment without audible artefacts

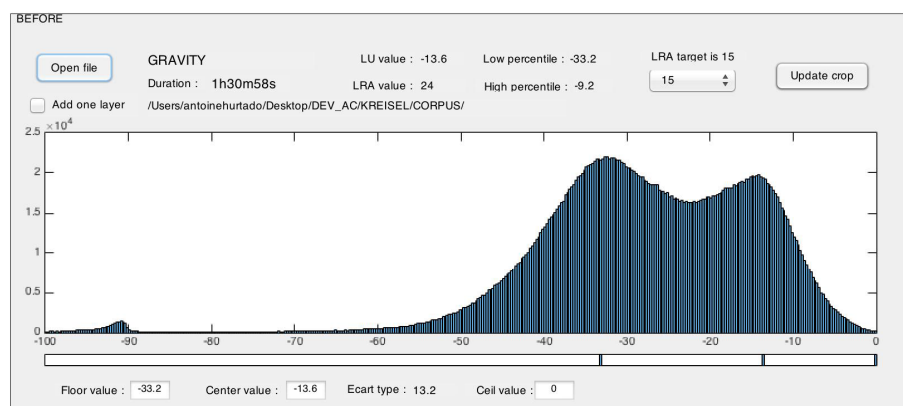
The ISOSTEM Loudness Ranger is an innovative tool for automatic and adaptive loudness management compliant with EBU R 128. The new dynamic processing method is used to manage audio signal levels in the production, distribution and transmission of broadcast programs.

The algorithm is the best approach in reducing the audio dynamic of the signal without adding distortion that constantly alters the intelligibility of our programs;

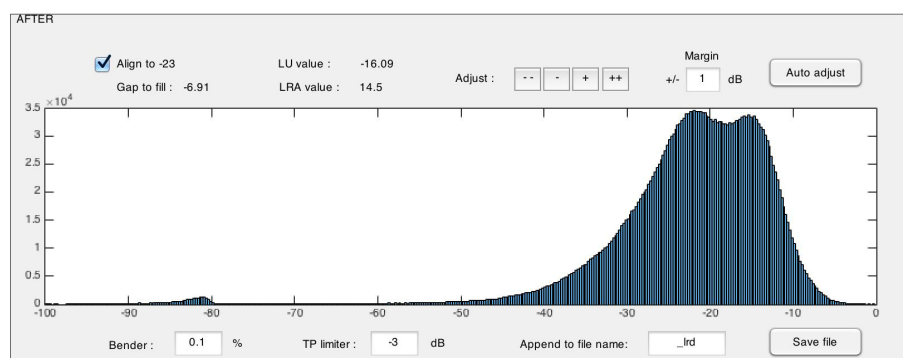
it is based on a multiple time-scale analysis, computed at a high rate, which provides a complete picture of the energy distribution and thus distinguishes what is on a scene scale from what is on a shot scale. It avoids using additive compressors that crunch the signal and, on the other hand it remarkably preserves the space feeling of a high dynamic range by only applying infinitesimal ratios (e.g. 1.01 to 1.05 according to the LRA gap to fill) on a large number of overlapping windows. The targeted LRA criterion is thus reached without generating any hearable modification.



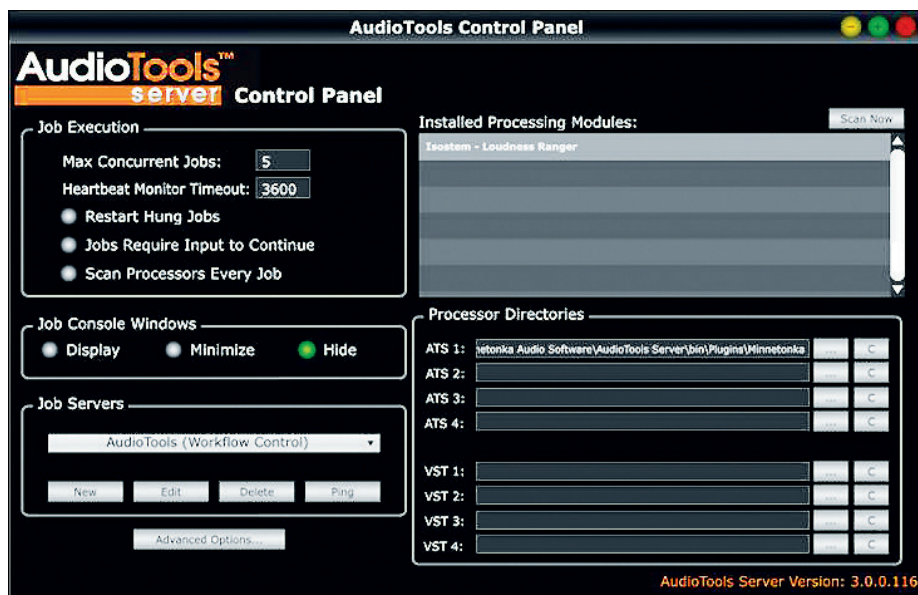
Above: The multiple layer scanning of the programme



Aside: Gravity BluRay edition, DTS English 5.1 audio track, display of before and after processing the audio levels on a 12 layers base.



Notice on this Matlab histogram, that the additional 10dB on the noise level (on the left) are less than the reduction of the gap (around -23dB) between the action scenes to the dialogue scenes.



ISOSTEM Loudness Ranger comes as a plug-in of the Minnetonka Audio Tools Server 3. It is delivered with the version 3.0 installer of Minnetonka ATS. In this low level computation environment, it performs a 2-hours program in less than 4 minutes with an i7 32Go RAM standard PC.

The job wizard allows you to enter the LRA target to be reached inside a  $[-0.5, +0.5]$  tolerance and the user parameters are :

- LRA (target value)
- LUFS (program loudness value that can be set to keep original value)
- TP limiter (true peak limit)

DSPECIALISTS  
Digitale Audio- und Messsysteme GmbH  
Helmholtzstraße 2-9 L  
10587 Berlin, Germany

Tel: +49 30 467 805-0  
Fax: +49 30 467 805-99

sales@dspecialists.de  
www.dspecialists.de

**DSPECIALISTS**  
Digitale Audio- und Messsysteme GmbH

MINNETONKA  
Audio Software, Inc.  
16182 State Hwy. 7  
Minnetonka, MN 55345, USA

Phone +1 (952) 449-6481  
Phone +49 2162 106 26 22

contact@minnetonkaaudio.com  
www.minnetonkaaudio.com

