# New Features CadnaR - 2018

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- Calculation/Configuration
- **CadnaR**-Objects
- Further New Features
- Miscellaneous
- Import/Export
- **CadnaR**-Options

## Calculation/Configuration

- new CUDA option for the particle model: uses the parallel computing power of an Nvidia-GPU (requires Nvidia graphics card with at least „shader model 2.0")
- CUDA option: particle visualization up to 50th order possible
- Configuration/Particle Model: global scattering coefficient now applies to the room and to all areas in the table Partial Areas
- Configuration/Particle Model: new options „equal number of particles per source" or „... per octave" for RIA calculations (default: on)
- Configuration/Particle Model: new option „maximum reflection loss" (default: off, default value: 60 dB
- Configuration/Particle Model: new option for particle diffraction (requires the option „generate particles by octave" activated)
- modifications for menu command **Calculate Receiver Chains**: With the SHIFT key pressed, just the actual variant is calculated. With the SHIFT key pressed while having a receiver chain selected, just this chain for the actual variant is recalculated.

## CadnaR-Objects

- receiver + receiver chain: level, RIR quality criteria and Sigma values are now stored per variant in attributes (no longer as string variables in the Memo-Window): access by variant number attached, e.g.: LPV03 to access the level of the 3rd variant, EDT_2000V05 to access the Early Decay Time at 2 kHz of the 5th variant etc. (with no variant number attached: value of the actual variant)
- dialog **Receiver**: dialog enlarged to display spectral RIA quality criteria and RIA single values (+ level, sigma, sigma iter.)
- dialog **Receiver Chain**: dialog enlarged to display spectral RIA quality criteria
- tables **Receiver** + **Receiver Chain**: new table columns for Sigma A and T20 (in addition STI male for receiver)
- dialog **Bitmap**: now the bitmap can be saved within the **CadnaR** file

**Further New Features**

- dialog **Modify Attribute** (via dialog **Modify Objects**): button"Defaults" enables Select/Save of presets
- dialog **Options|Miscellaneous**: new graphic option "Offset per Group Level" (offset = distance from the outer object frame, zero = no overlap)
- new context menu command **Set Length** for polygons
- command **Convert to**: converting receiver chain/s into individual receivers
- new command **Purge Tables** (on menu **Tables|Miscellaneous**): deletes double spectra from the local libraries or spectra not addressed by any source (holds for spectra of sound power level, sound reduction index, absorption, and scattering coefficient)
- dialog **Modify Objects**: Now, besides a numerical condition also a condition for text strings can be used.
- dialog **Modify Objects**, action "Delete" for Auxiliary Polygons: condition for deleting rays available per default (expression: match(ID$, "RAY*") ).
- menu **Options|Evaluate Receiver Chains**: now specifying the averaged T20 spectrum for all points of all receiver chains (text can be copied to the clipboard)
- menu **Options|Spatial mean reverberation times|Tables**: spatially averaged reverberation times at receivers and for receiver chains now available also as a table
- dialog **Options for 3D Representation**: visual transparency in 3D specifiable per object (new button "3D" on object dialogs for Box-type Obstacle, Barrier, PolyMesh, Box-type Source, transparency 0 (opaque) <= x <=1 (invisible)
- dialog **Options for 3D Representation**: option "not selectable in 3D view" to set an object not selectable per mouse in 3D view (to enable access per mouse to objects below)
- Consistency Check: now checks for validity of referenced library objects in object dialogs (for sound power, absorption, scattering coefficient, and transmission)

**Miscellaneous**

- double click on the Group frame in 2D opens the dialog **ObjectTree|Definition** showing the respective tree
- new folder symbol serving as object symbol for groups (in dialogs **Layer**, **Appearance**, **Select Object**)
- In 2D, a selected group frame is now highlighted in cyan color and with increased line width.
- Invalid frequency bands of the sound pressure level spectrum are no longer displayed (before -99).
- The display of spectra in object tables is now restricted to the frequency range specified in the Configuration of Calculation.
- menu **Extras**: new system info displays CPU and RAM data
- toolbar: new icon for command „Calculate Voxel Grid"

**Import/Export**

- menu **VoxelGrid|Export**: exports the voxel grid to a proprietary binary format to be imported by the software „pCon.planner" from EasternGraphics GmbH, Germany

**CadnaR-Options**

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