New Features of CadnaR Version 2022

*The new features of **CadnaR** 2021 MR1 can be found [here](.).*

Calculation / Configuration

- New function: "Calibrate spectra" for automatic adjustment of material properties (absorption coefficients, scattering coefficients) to achieve user-defined target reverberation time
- Possibility to now define scattering coefficient globally for all objects and surfaces of surrounding room
- Scattering coefficient can now be defined per surface of the surrounding room

CadnaR Objects

- Multi-selection of several objects possible, e.g.
    - in 2D-View drag frame with right mouse button pressed
    - add objects to multi-selection: keep CTRL- key pressed and drag frame in 2D view with right mouse button or click on single object
    - add objects to multi-selection in 3D-view: CTRL + click with right mouse button on single object
- Object tables can be filtered to show current multi-selection
- New attribute MULTISEL to also allow modifying the multi-selection via object-tables and "Motify Object | Modify Attribute"
- New attribute LENAREA for barrier: Area (one side of the barrier, half of the barriers total surface)
- Attribute LENAREA vert. Polymesh: now automatically uses triangulation to determine the area (one side, half of total surface)

Further New Features

- 3D view: Move camera perpendicular to the direction of view with middle mouse button pressed + mouse movement
- "Clean Tables" now also deletes unused 2D and 3D library symbols
- Dialog "Appearance" now accessible via button in the toolbar. Switch object visibility on and off by double-clicking on entry in the object list.
- Update DXF Export: box-type Obstacles and Box-type Sources nows exported as 6 rectangles, Vert. Polymesh exported as triangles
- Diagram for Reverberation time: target reverberation time for "Calibrate spectra" can be displayed via submenu "User-defined reference reverberation times"

Miscellaneous

- Consistency check: Check object expansion adapted to min 1mm length/height or 10mm² base area
- Consistency check: Warning if grid height outside the surrounding room

New Features of CadnaR Version 2021 MR1

Calculation / Configuration

- Calculation of NR and NC noise rating curves according to VDI 2081-1. Output for each receiver or as spatially averaged level spectra (in menu Options).
- When aborting a calculation with the particle method, the results of the last iteration can now be kept (default = activated)
- Calculating the workplace level for source groups now taking into account the floor as fully reflective (previously: actual absorption of the room's boundary surface)
- Configuration of calculation: „Generate particles per octave" now activated by default
- Calculation of standard deviations (incl. number of points) in the table "Spatially averaged reverberation times (receivers)"

CadnaR Objects

- All point and polygon objects: Object snap when moving / creating polygon points while pressing the ALT key
- Receiver: New diagram Level spectrum for displaying the sound level spectrum incl. NR and NC noise weighting curves
- Receiver chain: optional specification to use rounded values of $L\_p,A,S,4m$ and D_2,S for calculation of "Propagation class" and display in dialog
- Bugfix, object Box-Type Source: Corrected conversion to LwA when using LwA'' and non-emitting surfaces
- Receiver: New attributes S_NC and S_NR to show the single number value according to noise weighting curves of VDI 2081-1.

Further New Features

- New language: Italian
- Variants: Double click on a variant in the listbox activates / deactivates it.
- Display of error bars in the diagram "Spatially averaged reverberation times" (receivers & grid)
- Adjustment of the line width in the diagrams via the corresponding menu item. Fine adjustment via CTRL and +/-
- Definition of a prototype file, which is loaded at every start of CadnaR
- New toolbar icon for accessing "Spatially averaged reverberation times (receivers)". Multiple functionality via pressing CTRL and SHIFT for direct access to table and variant comparison.

Miscellaneous

- Consistency Check for all receiver chains: Check if height of chain points are equal to source height.
- Consistency Check: Warning at calculation of "receiver is workplace at source" with LpA for a single source, if 0. order is not calculated with image sources.