

New Features of CadnaR version 2020

The list of new features offered by **CadnaR** is subdivided into the following sections:

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

Please note that some of the new features may require the appropriate **CadnaR** option.

The new features of 2019 MR1 and MR2 are in Italics.

Calculation/Configuration

- Estimation of the mean absorption coefficient from T20 at receivers assuming a diffuse sound field

CadnaR-Objects

- Obstacles: Objects with an active option "not selectable in 3D view" can now be selected by holding down the ALT key.
- **Options | Appearance** menu: appearance of text and level boxes are now editable
- *vertical PolyMesh: now offering a shape editor enabling hole patterns inside (for example, doors or windows), shape editor using local coordinates u, v .*
- *vertical area source: may now consist of several segments (with lower/upper height at each polygon point)*
- *contour line: may now be a closed polygon, consisting of at least 3 points*
- *barrier, vertical area sources: may be converted to vertical PolyMeshes (n objects from n segments)*
- *vertical area source: new action/command **Break into Pieces** and **Connect Lines** (same as for barrier)*
- *barrier, vertical area source, vertical PolyMesh: using action/command **Duplicate** in z -direction now considers the minimum height z_{min} .*
- *new object - vertical poly mesh: screening object with arbitrary lower and upper edge, which also may contain openings.*
- *barrier: may now consist of several segments (with lower/upper height at each polygon point, enabling to define inclined lower and upper edges (for particle model, for image source calculations: inclined edges are ignored, rectangular segments are treated as individual barriers)*
- *polygon objects: dialog/action **Modify Attribute** offering new height attributes (HA, HE)*
- ***Polygon Point** dialog (via **Polygon: Geometry** dialog): Z coordinate gets grayed out with interpolated heights (i.e. heights not entered)*

Further New Features

- Tables: new search feature in object tables and in the group table (searches for name, attribute BEZ), wildcards * and ? applicable
- keyboard control in tables: Key combination SHIFT+Enter calls edit feature for the currently selected row (analogous to double-clicking with the mouse).
- Tables: now with color highlighting of the current table row (with an individual cell selected)
- **Help|Check for Updates** menu: This feature checks whether software updates are available.
- **Options|Proxy Server Settings** menu: now with access via a proxy server for update checks
- **Help|What's New** menu (+ toolbar symbol): displaying a news button upon availability of a new messages, alternatively selectable via menu command, displays news in the Internet browser selected on the system
- **3D View (Camera menu)**: alternative control of the camera using arrow keys + mouse from the ego-perspective (retaining camera position and orientation)
- **3D View**: new option "Show Room" (normal, floor only, off), shortcut SHIFT + W
- **Modify Objects dialog, Modify Attribute**: With several object types selected, the common attributes are now displayed on the "Attribute" list box.
- global library **Absorptions**: now with English translations (if required, copy via the library manager from default to global)
- **ObjectTree**: when displaying deactivated ObjectTree groups now makes use of the settings for the object type "(deactivated)".
- **ObjectTree**: non-visible ObjectTree groups can no longer be selected with the mouse.
- **Delete grid/voxel grid** commands: SHIFT key deletes the grid of current variant, CTRL key: as before + reset to default grid spacing
- dialog/action **Modify Attribute**: now with describing text for attributes
- **Generate Label** dialog: offering save/load of presets and descriptive texts in brackets for common attributes
- **Tables** menu, context menu: command **Delete** while holding down the CTRL key removes all datasets after confirmation prompt
- **Tables** menu, **Scattering (local/global)**: command "Modify Spectrum" (via context menu) offers to generate a scattering spectrum from an entered roughness K (resulting scattering coeff. at 1 kHz = entered roughness value)
- dialog **Library: Color Palette (local/global)**: new button "Individual" enables to define classes individually (specification of lower/upper limits, class width, taking into account the actual number of colors of the color palette, adjusting the value range of the existing classes)
- **Grid Appearance** dialog: direct access to currently selected local color palette (enabling direct editing)

Miscellaneous

- **3D-View (Representation|Properties** menu): adjustable mouse sensitivity (for rotation and translation) and speed of camera movement (for ego-perspective)
- **3D-View (Camera** menu): automatic camera movement along a selected auxiliary polygon (key combination Shift+M), camera rotatable using the mouse
- Consistency Check: warning when using sound reduction indices > 50 dB (test per octave)
- *Consistency Check: checking the lower object heights zmin, whether they are inside the room.*

- *Consistency Check: check for too short segment lengths of line sources (warning, if at least 0.5% of the total length is invalid)*
- *Consistency Check: With syntax errors occurring in references to spectra of objects the attribute is specified in the message (ALFAL, ALFAR, STREUL, STREUR, TRANSL, TEMI)*
- *Consistency Check: validity check for ID when selecting library spectra (sound power, absorption, scattering, sound reduction, product)*
- *Consistency Check: extended validity check for ID for selected library spectra (e.g. ID starting with a figure)*
- *Consistency Check: error message remains 2 min. by default, timeout can be set in seconds via CADNAR.INI file (section [CadnaR], Warning Timeout = 5, default 120 s, min 2 s, max 3600 s)*

Import/Export

- **File|Import** menu, "SketchUp" format: offering import from Sketchup 2019 x64
- **File|Import** menu, Format "SketchUp": new option "Create boxes if possible"
- **File|Export** menu: Export of the current grid as a bitmap file (*.bmp, output as area grid, if necessary with oversampling, one pixel per grid point)
- *Import Sketchup (Import Options): Holes in imported PolyMeshes are stored as embedded contour lines.*
- *Import Sketchup (import options): optional transfer of object color and opacity from the Sketchup model*
- *Import Sketchup (import options): optional generation of scattering spectra with material names (analogous to absorption spectra)*
- *Import Sketchup (Import options): Sketchup layer name is written to a string variable of the imported object*
- *Import Sketchup (import options): invisible objects and layers in SketchUp can be skipped during import*
- *DXF export: for vertical area sources, box-type obstacles and box-type sources now exports the entire 3D object (as triangles, not just the top edge)*
- *DXF export: new object types for export: barrier, PolyMesh, receiver chain, receiver, height point, contour line and calculation area*

CadnaR-Options

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