

## New features of CadnaA 2023 MR1

New features of **CadnaA 2023** can be found [here](#).

### Features

- PlotDesigner
  - Mouse wheel zoom for easy zooming in the PlotDesigner view
  - Undo / Redo commands available via symbol bar, menu bar and keyboard shortcuts CTRL+Z and CTRL+Y
  - Keyboard shortcuts CTRL+C and CTRL+V to easily copy and paste cells.
  - Panning the view is now possible by holding down the mouse wheel or the middle mouse button.
  - Selection of objects in the PlotDesigner view improved:
    - Single click with left mouse button: With a single click - irrespective of the cell type - the cell which is in the foremost level in the view is always selected.
    - ALT key + single click with left mouse button: Similar to single click, but the selection only takes into account cells that are not containers.
    - CTRL + click with the left mouse button on a selected cell: Selects the higher-level container in the tree structure that contains the cell. With this function you can easily switch through the hierarchy levels.
  - Horizontal and vertical containers now with checkbox "consume unused space automatically" (default = active). If activated, this function corresponds to an empty cell with setting "as large as possible" in last position.
  - For an empty cell in a horizontal or vertical container, the size setting "auto" now corresponds to "as large as possible" in the respective container direction.
  - Improved handling of cells in a freely positionable container.
  - Function "Catch children" moves and - if necessary - scales the child cells if they do not fit into the container.
  - Zoom to the page when switching between pages.
  - Axis labelling is no longer displayed for rotated sections.
  - Improvements in the use of grid lines
  - Grid display "Areas of equal sound level" in connection with "Show grid values" is now also displayed in PlotDesigner.
- ObjectScan: Evaluation with settings *Object Type = Grid Point* significantly accelerated.
- Grid Arithmetics significantly accelerated.
- Shortcut CTRL+F opens the menu Edit | Search...
- When calibrating bitmaps, the original format is kept (before it was always changed to .bmp files)
- Color palettes of the default library are now displayed directly in the drop-down menu at Grid -> Appearance.
- New import format Aircraft Noise XML for DES, radar tracks and aircraft classes.

- Options | Land Use: Input of limiting values for the usage type "without usage" is no longer possible in order to avoid errors.
- Text blocks "OPT\_OLD\_CALC", which can be used to perform calculations according to earlier versions of CadnaA, are now listed as a warning in the consistency check.
- If an error occurs while saving a file, a warning message is displayed. The last successfully saved state is retained.
- Optimization when displaying auxiliary polygons for which the line width is defined by a formula with match() or matchx().
- Self-screening for the rail object is now also displayed in the 3D Special view.

### Calculation Methods

- RLS-19, Road Surface correction according to table 4a: Changes when entering speed values in the interval [61, 64] km/h. *For details, see the German version of this document.*
- HJ 2.4 2021 Railway: Calculation of 3D reflector and screen with cantilever improved (changes already in release 2023)
- SonRoad18:
  - Import of road types now possible via ODBC/Excel interface. For more details on attributes, see manual "Attributes, Variables, and Keywords".
  - Default table of object type Road now shows Lw' in the column header (instead of Lr,e before).
- Object Scan:
  - Preset „EU/DE 2021/1226, Quietest grid point near building, Step 2“: Window size changed to 0.0001 m in order to avoid errors with adjacent buildings.
  - Preset „EU 2015/996: People in level classes (Single dwelling)“: Evaluation for buildings with hidden façade points (e.g. due to neighboring buildings) corrected.
  - Preset EU/DE 2021/1226 | Quietest grid point near building | Step 2: Formula for validity of a grid point can now be defined.
- Templates 2021/1226 EU/DE/AT:
  - Menu Grid | Specification: "Exclude building" setting now always checked to be active.
  - Menu Calculation | Configuration | Tab General: Setting „Extrapolate Grid 'under' Buildings“ checked to be active.

### Attributes, Variables and Keywords

- Keyword #(ObjAtt, CalcConf, Paramter2) extended with attributes for accessing settings of calculation method HJ 2.4 Industry, Road and Railway.
- Keyword #(GLK, Parameter1, Parameter2) now with second parameter to reference a specific plan cell of the plot designer.
- Access to the object scan results table now possible via the #(Table, ObjScan) keyword, e.g. to be used in combination with "Print report".
- Can be used via Lua with cna.run\_macro(). For more information see manual at #(ObjAtt, OBJ\_SCAN) or #(SetObjAtt, OBJ\_SCAN, ...).

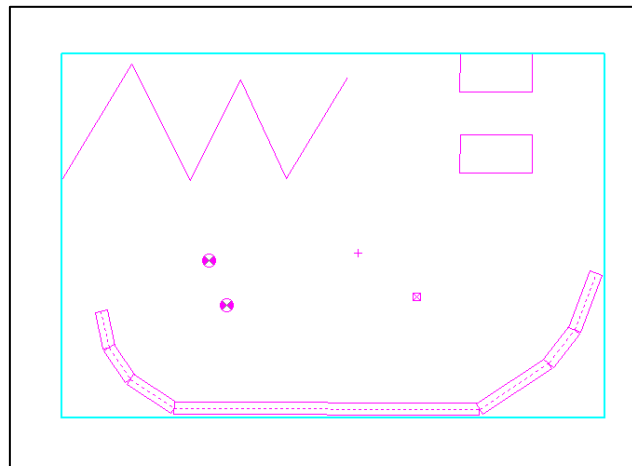
## Bug Fixes


- Interoperability with CadnaB:
  - Fixed error while loading façade points to CadnaA.
  - CadnaB basement floors are now correctly considered in CadnaA.
  - Partial levels are now calculated for CadnaB buildings (source)
- Tables | Variants | Modify Calculation Configuration: When reading and writing via the folder symbol, a point is now always used as decimal separator (previously dependent on the setting in menu Properties | Other)
- Menu Grid | Open | Ascii-Grid: Import fixed
- Export of number of flights for AzB corrected (previously deviation by -1 if evening period was not used)
- Menu Extras | ObjectScan: Evaluation with settings *Object Type = Grid Point* and *Action /Sum into = Specified Areas / Polygons*: Grid points with unequal height /width ( $dx \neq dy$ ) are now considered correctly.
- Menu Import | Bitmaps: Fixed error when importing multiple bitmaps at once.
- Rotation of bitmaps corrected, e.g. if bitmaps are part of a Multiselection and the Multiselection is rotated by holding down the ALT key.
- When using the function "Change ObjectTree assignment" in connection with variant- or group-dependent activations, an incorrect activation state of objects could occur. Implementation corrected.
- Multiselect:
  - When displaying a table filtered for multi-selection and deleting all rows, now only the objects of the multi-selection are deleted (previously all objects were deleted)
  - In an object table filtered for Multiselection, the MULTISEL attribute can now be changed via "Change column".
- Undo / Redo function: A transformation defined during import was taken into account in subsequent undo and redo steps, so that objects moved further. Transformation is now no longer taken into account.
- Undo / Redo function: If a railway object was assigned emissions by a *number of trains* list, this list was not restored correctly after executing undo and redo.
- Possible crashes avoided:
  - Export via object table | Print
  - APL Calculation
  - Calculation of the ground absorption map for very big projects.
  - Exceeded ID length by assignment of an ObjectTree group

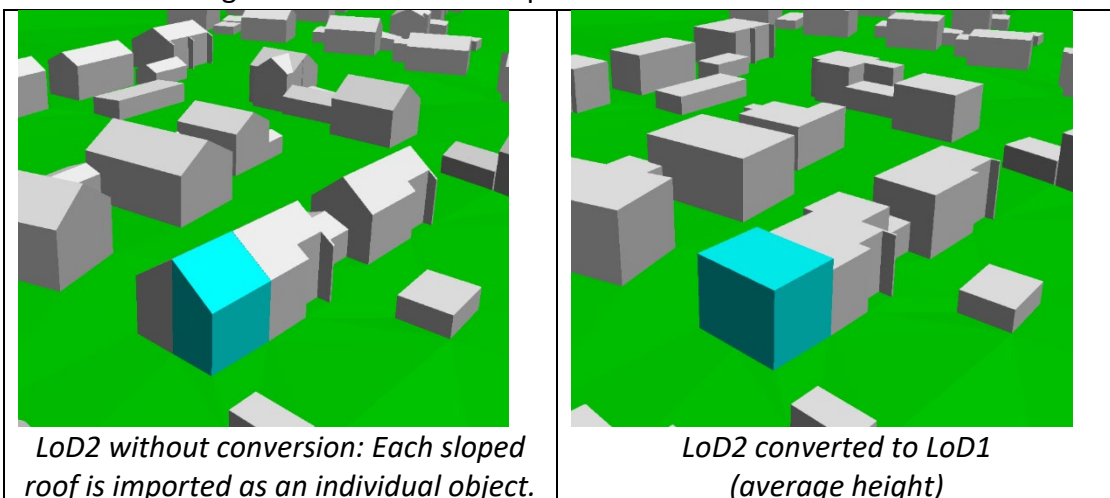
## New features of CadnaA 2023

### Features

- Multi-selection of several objects possible, e.g.
  - 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



- Object tables can be filtered to show current multi-selection
- Toolbar | New icon  for direct access to the appearance menu.
- Options | Appearance: New buttons „All“ and „None“ for activation / deactivation of appearance for all object types.
- Options | Miscellaneous: New option to define color for currently multi-selected objects.
- All point and polygon objects: Object snap when moving / creating polygon points while pressing the ALT key
- CityGML import: New option to convert LoD2 data to LoD1 data while importing. For the height of the resulting LoD1 buildings, the average, maximum or minimum height of the individual sloped roof surfaces can be used.



- Options | Appearance | Symbol: Length, Width and Angle of a symbol can now be entered as an expression. Examples:
  - Show the main direction of the directivity of a point source depending on the attribute DIR\_ANGLE.
  - Visualize the search radius of a crossing object depending on the attribute SEARCHRAD.
- New function: Table | "Copy group activation" to transfer the activation states in Table | Group to the current variant for a more efficient creation of new variants based on existing variants.
- Menu Tables | Delete partial levels: New function to delete partial levels for the current / for all variants.
- Modify Objects | Generate Building evaluation: New dialog to define settings for all building evaluations upon creation (previous workflow with creation of a dummy object no longer needed)
- Crossing: Search radius for automatic assignment of roads to crossings can be defined by the user (before always 20m).
- Transformation between different zones now possible, e.g. to transform UTM data referenced in zone 33 into zone 32.
- Color Palette (local/global) library: 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)
- Calculation | PCSP: Consistency check warnings are stored as local text blocks for each tile. After importing the results, all warnings including the tile number are available in the local library.
- Function "Generate Terrain Contours from Height Points" can be executed without simplification of DTM with SHIFT+ALT+F12 (previously, contour lines < 30 meters were not created + command "Simplify geometry" with value 0.5 m was applied).
- Grid | Arithmetics: If target grid (current variant) is not yet initialized, a warning message is shown.
- Import | ESRI shape: Support for shp data with type 31 (MultiPatch).
- New Lua function `cna.import_citygml(path, building, dtm)` for import of CityGML files with definition of corresponding settings.
- New Lua commands (read/write) to grid specification with `cna.grid.dx/dy/z/exclude_src/exclude_bld/exclude_bld_3D/use_limits`
- Transformation with NTV2 grids: definition of a user defined path via the ini file (Section [GeoCoordSys], variable NTV2Path=<path>)

## Configuration Methods

- RLS-19: Road surfaces are now implemented as library object. This functionality can be used to define user defined road surface.
- CNOSSOS-EU (Spain): Aerodynamic correction for default railway classes is now applied from > 249 km/h (previously: > 250 km/h) (pending changes Guía para la aplicación de ADIF)
- HJ 2.4 2009/2021: Calculation of foliage added for noise types industry and road (as ISO 9613-2 at 500 Hz).
- HJ 2.4 2009/2021: Calculation of  $A_{gr}$  corrected when using method GB/T 17247.2. Calculation now always uses a frequency of 500 Hz for the calculation.
- HJ 2.4 2009/2021 | Configuration of Calculation: New option to select how  $A_{gr}$  should be considered when calculating  $A_{bar}$  with respect to single or multiple diffraction.
- HJ 2.4 2021 Road/Railway: Consideration of negative path difference according to formula A.24 of HJ 2.4 - 2021 if  $0 > N > -0.2$ .
- HJ 2.4 2021 railway noise: Function "Pass-by" not available anymore, because emission data is not suitable for the calculation of pass-by level.
- Configuration of Calculations | Tab Meteorology: Enter a user-defined north direction for consideration of meteorological effects.
- Configuration of Calculations | General | Angle Scan Method: If activated, function "Pass-by" of individual vehicles is not available anymore.
- Railway | FTA/FRA: For license configuration with FTA/FRA, calculation method Schall03 (1990) not included anymore.
- Tables | Libraries | Absorptions: Sound absorption coefficients from "LAI-Hinweise zur Lärmkartierung - Dritte Aktualisierung vom 29./30.03.22" added to the default library. For application, these can be copied to the local / global library via the library manager.
- Calculation | Multiple Source Effect: New option "DE 2020/367 (mittlere Werte Pegelband)" to take into account the level bands according to §5, Abs. 3b, 34. BImSchV when determining the number of ischaemic heart diseases, high annoyance and high sleep disturbance.
- Noise Mapping | Rounding according to 34. BImSchV / BEB (Germany):  
*Detailed information can be found in the German version of this document.*

## Bug Fixes

- When importing .cna file with option "Import only section", objects of type Building Evaluation were not considered.
- Progress bar was not shown correctly when importing big GML files.
- When using a configuration template, the check for a calculation method is performed only if objects of this corresponding noise type exist in the project.
- Fixed possible crash when importing data from WMS servers.
- CityGML import: For some files, address data was not imported correctly.
- Fixed possible crash when copying an object table including attribute MEMO.

- Calculation | Configuration | Templates | sonRoad18: Check for ALFAL == 0.21 or RVL == 1.0 for buildings adjusted. Previously, in some cases a warning appeared although a correct value was entered.
- Excel-Import: When importing a cell with multiple text variables, the line break used in Excel with ALT+ENTER is now recognized correctly in CadnaA.
- Pass-by function for noise type rail with definition of a rail penalty > 0: Correction of the calculation, because the rail penalty was previously taken into account on the emission and immission side.
- ObjectScan | Preset „EU 2021/1226 – Residents - level classes (Median) “now considers a threshold value of -66 dB (instead of -87 dB before). Building evaluations not calculated are no longer counted as part of the lowest class w/o a lower limit.

### **Attributes, Variables and Keywords**

- Crossing: SEARCHRAD for automatic assignment of roads to crossings.
- Road, RLS-19:
  - Selection of road surface via attribute now with STRO\_ID instead of STRONR.
  - Note: Attribute STRO (textual representation) is not available in combination with attribute STRO\_ID
- Building, EINW: Input now with 3 decimals.
- New attribute MULTISEL to allow modification of multi-selection via object-table and "Modify Object | Modify Attribute"
- Keyword #(Time) now with optional parameter regarding format. Example: #(Time, HH\_mm\_ss) returns the current time in format 12\_34\_01