

## EFC-400 Release 2022 – new Audible Noise Functions

Overview of the new features:

- ☐ Readout of emission spectra in considered points of sound level calculation
- ☐ Height correction can be optionally switched off for sound level calculation
- ☐ Screen-Scale of the software optionally Dpi-Aware (scalable) or 100% (fixed)
- ☐ Phase optimization without local worsening according to 26. BImSchVVwV

### New Calculation Functions:

- For phase optimization there is now the new option 'optimize on all points - allow no pt worse' with which the user can optimize not as before all points to the maximum value, but the optimization takes place in such a way that a point never becomes worse than already given. This procedure is mandatory for an automated optimization according to 26. BImSchVVwV.

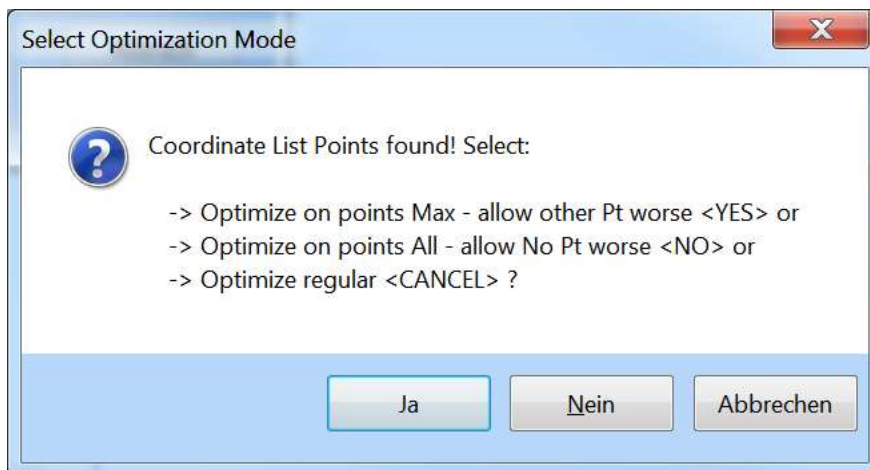


Fig.: Option 'optimize on all points - allow no point worse' in the phase optimization dialog



Fig.: Example for optimizing the phases according to 26. BImSchVVwV

## New Audible Noise Functions:

- When performing a sound level calculation, a comment with information on voltage, system, phase angle and conductor cross-section is now written to the 'noise.log' file for the individual conductor at the end of each line. This provides better orientation for assigning the surface field strengths.

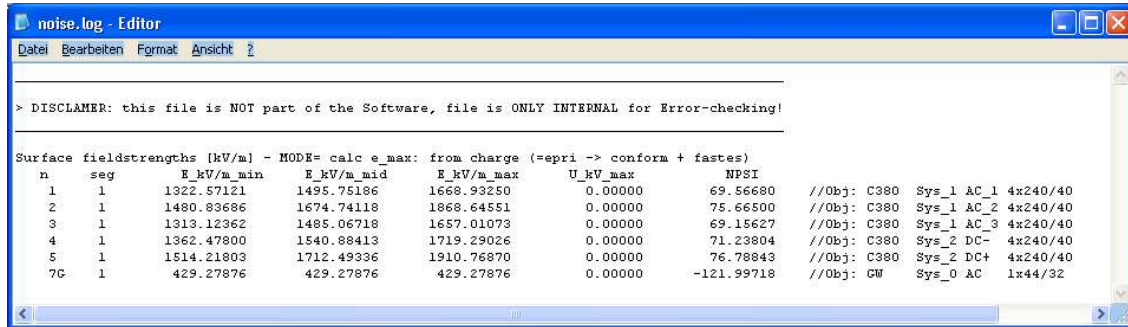


Fig.: 'noise.log' in the text editor

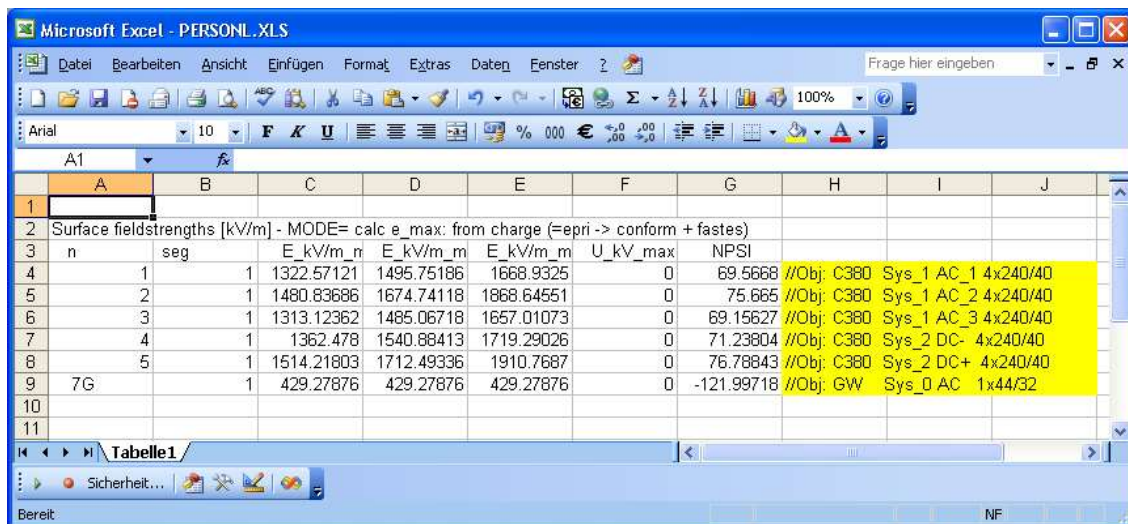


Fig.: Import of 'noise.log' file into Excel

- In the acoustic settings, it is now possible to switch off the height correction for sound sources. The corresponding checkbox has been unblocked. The execution is done (as like the other surcharges) for all methods 1-12. The option is saved together with the project in the \*.cfg file and loaded from it. For all old projects, therefore, the height correction is always =ON, just as globally when starting EFC-400 or creating new projects. During the QSI-export, the surcharges are ignored while the height correction is preserved (if not deactivated). This is also documented in the 'Noise2QsiConfig.log' file.

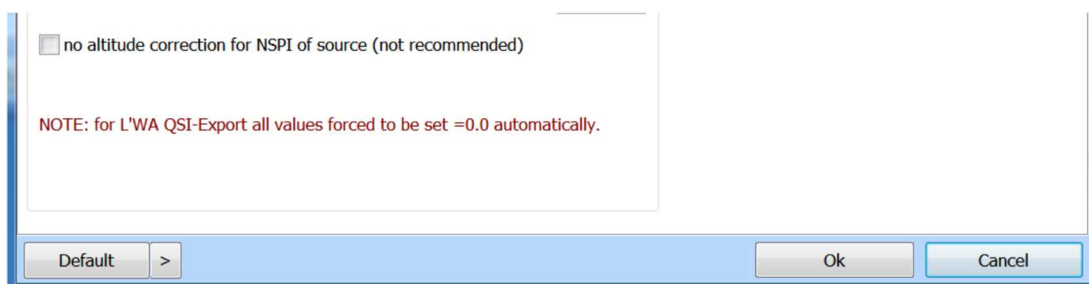


Fig.: Switch-off option for height correction unblocked

- Performing sound calculations, not only single number values, but also emission spectrums can be readout for considered points now. For this purpose, the considered points have to be selected by cursor in the construction window before the calculation. After the calculation, the emission spectra in the considered points can be readout in the coordinates-list and transferred to a text window by clicking on the 'Edit' button, which can be opened in Excel as shown below.

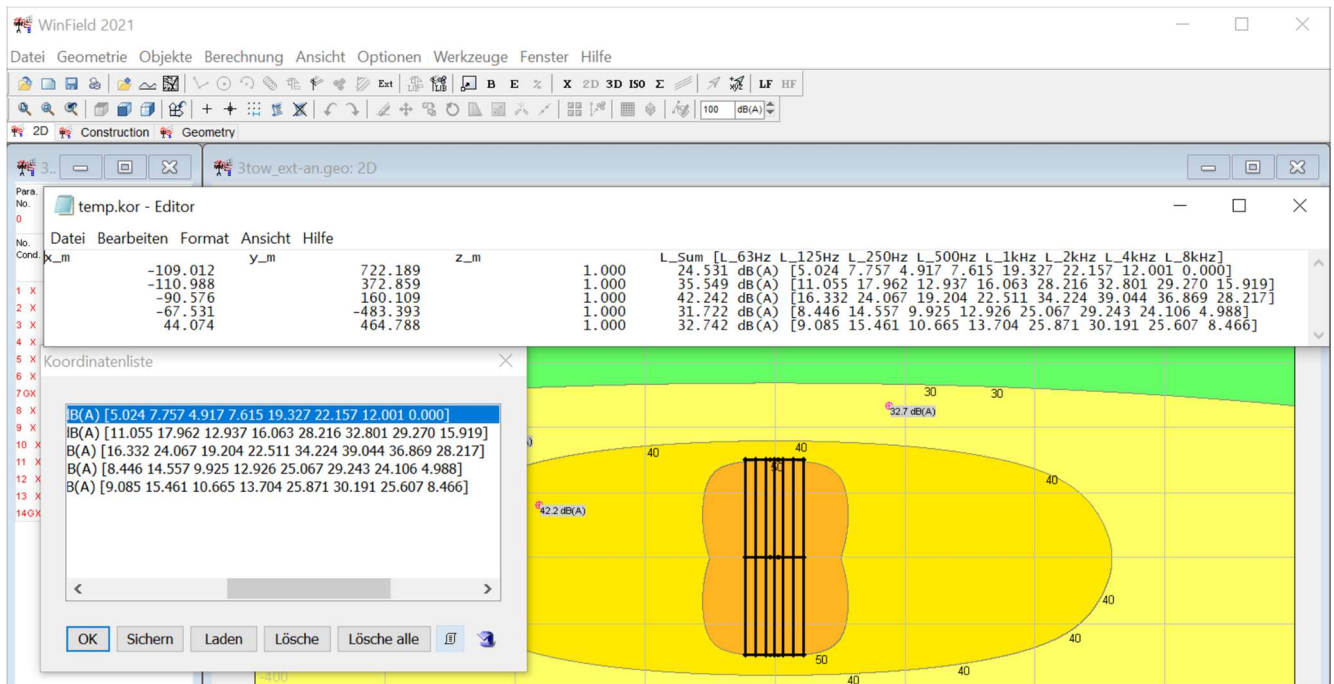


Fig.: Emission spectra of considered points in the coordinates-list and in the text window

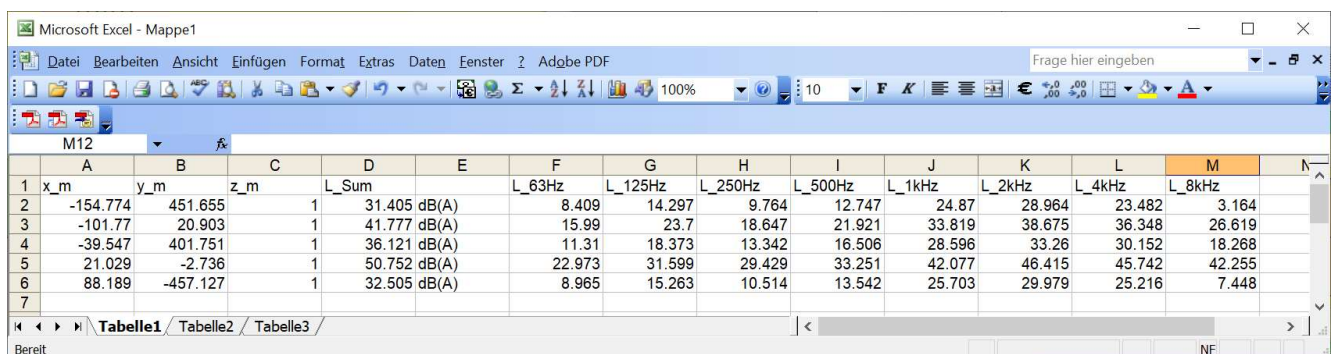


Fig.: Emission spectra of considered points after import into Excel



- During a phase optimization on points of the coordinates-list, a detailed listing is now logged in the file 'Phases.log', if the option 'Small log-file' is deactivated. The user can copy this into a spreadsheet program and manually perform an optimization of the locations according to the 26. BlmSchVVwV.

|    | A            | B                  | C       | D         | E       |
|----|--------------|--------------------|---------|-----------|---------|
| 1  | Coordinate # | fieldstrength      | Coord-X | Coord-Y   | Coord-Z |
| 2  | 1            | 0.60688043         | -56.284 | -203.655  | 0       |
| 3  | 2            | 14.7409582         | -15.118 | 87.728    | 0       |
| 4  | 3            | 29.7190113         | 2.004   | 158.747   | 0       |
| 5  | case no.     | fieldstrength [uT] | [kV/m]  | phase no. |         |
| 6  | 1            | 29.7190113         | 123 123 |           |         |
| 7  |              |                    |         |           |         |
| 8  | Coordinate # | fieldstrength      | Coord-X | Coord-Y   | Coord-Z |
| 9  | 1            | 0.5398351          | -56.284 | -203.655  | 0       |
| 10 | 2            | 14.2640238         | -15.118 | 87.728    | 0       |
| 11 | 3            | 30.2800426         | 2.004   | 158.747   | 0       |
| 12 | case no.     | fieldstrength [uT] | [kV/m]  | phase no. |         |
| 13 | 2            | 30.2800426         | 123 132 |           |         |
| 14 |              |                    |         |           |         |
| 15 | Coordinate # | fieldstrength      | Coord-X | Coord-Y   | Coord-Z |
| 16 | 1            | 0.33123404         | -56.284 | -203.655  | 0       |
| 17 | 2            | 12.801487          | -15.118 | 87.728    | 0       |
| 18 | 3            | 42.4470749         | 2.004   | 158.747   | 0       |
| 19 | case no.     | fieldstrength [uT] | [kV/m]  | phase no. |         |
| 20 | 3            | 42.4470749         | 123 312 |           |         |

Fig.: 'Phases.log' after import into Excel

## Improved User Interface:

- In the dialogs for editing multiple selected conductors or transmitters, the input fields are now only 'empty' if the values of the selected objects differ. If the values are the same, they are displayed in 'grey'. By displaying 'equal values' it is easily possible to check multiple objects as for example on voltage, current and phases.

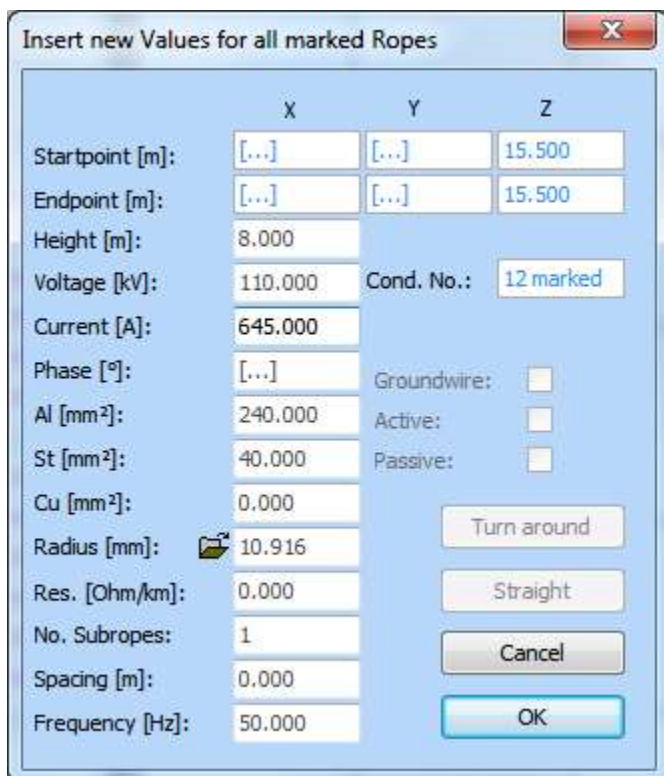


Fig.: Dialog for editing conductors with multiple selections

## General Improvements:

- In the 'Advanced Settings | Tools' the user can now fix the 'Screen-Scale' to 100% (what means 'non Dpi-Aware'). This causes the software to keep the size of windows, buttons and fonts constant, even though with increasing screen resolutions from 4K to 8K the 'recommended scaling' by Windows is 150% to 250%, which normally leads to a size reduction of previously mentioned elements.

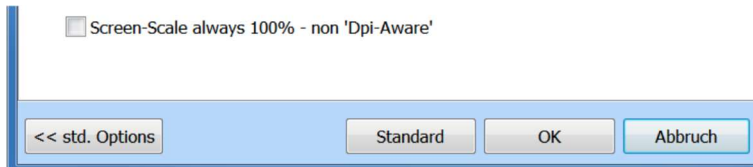


Fig.: Option 'Screen-Scale always 100% - non Dpi-Aware'.

## New Construction Functions:

- The limits for power transmission line projects have been increased. The number of 'extended towers' is now 2000 (previously 1000) and that of 'power transmission lines' 600 (previously 100).

## Cartographic Data:

- When exporting isolines etc. as \*.dxf file, the empty drawing 'EFC-400.dxf' is used as template. The layer colors defined in this empty drawing are assigned to the isolines during export. If the user wants to change the colors, this can be done directly in the corresponding 'EFC-400.dxf' file. In any case, AutoCAD-dxf-format R12 must be used for saving the file. In case of errors occur during manual overwriting, a security-copy of the original template exists in the directory 'whatsnew\dxf-originale'.