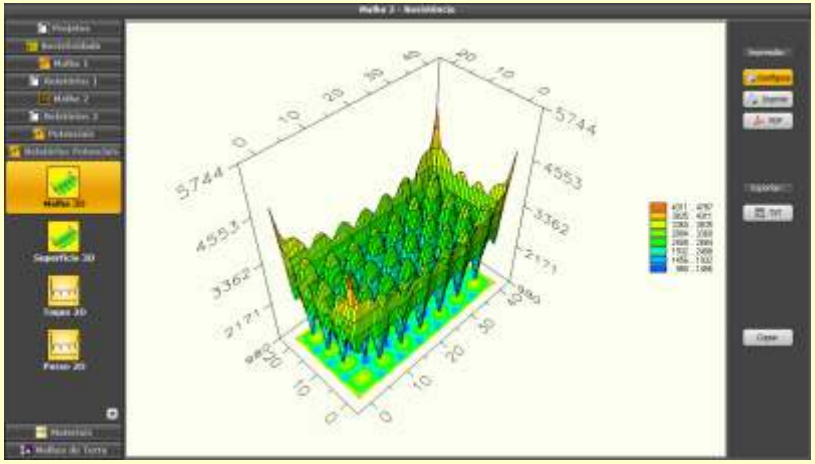
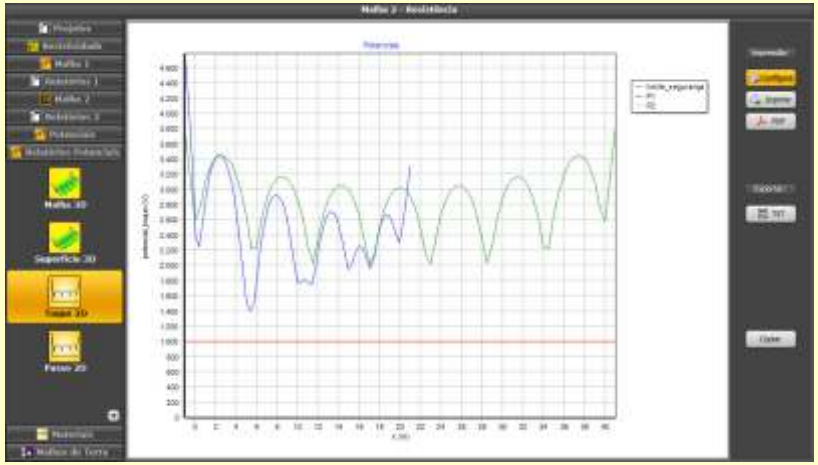
TECAT PLUS 6.3

Software for grounding grid design

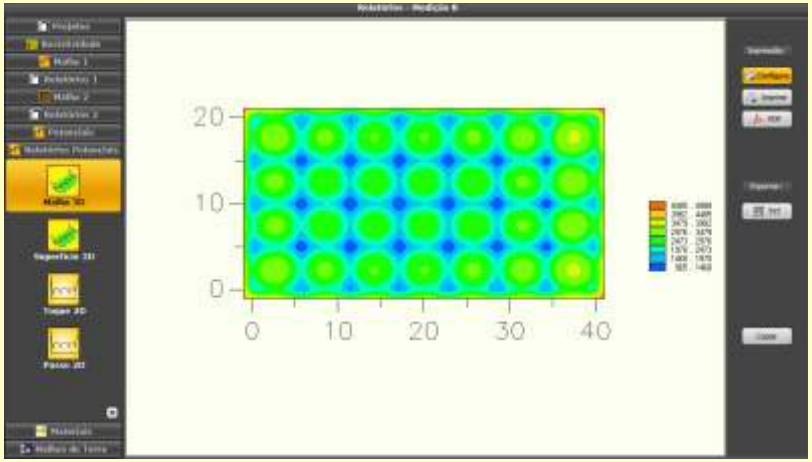
NEW! update 6.3 (October 2016)

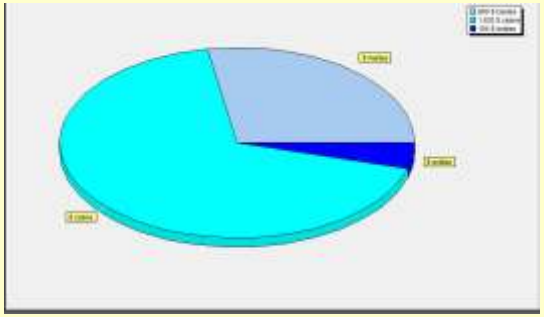


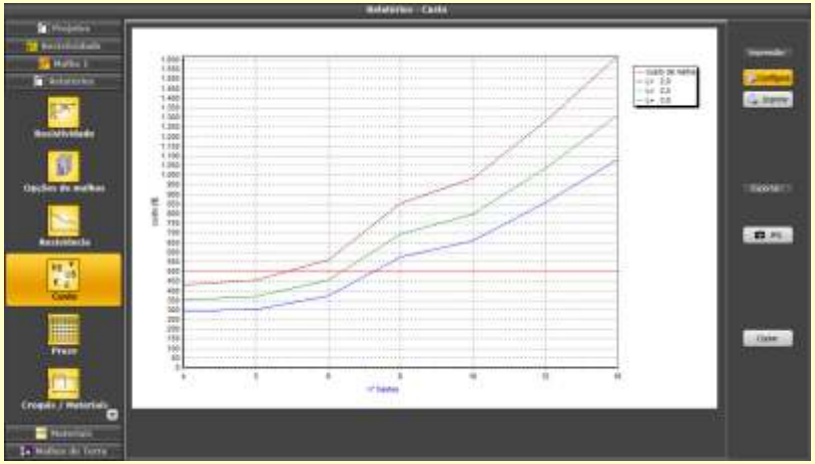


With 27+ years of development, TecAt Plus is the best cost/performance solution on the market for designing grounding grids for any application in 2-, 3- or 4-layer soil.

Exceeding the requirements of any major standard, TecAt Plus also gives you the analysis tools you need to find the optimized solution for your grounding needs.







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TecAt Plus functions:

SOIL RESISTIVITY
- Wenner or Schlumberger
- stratification in 2, 3 or 4 layers

GRID RESISTANCE
- any size complex grids in multi-layer soil
- NEW in version 6.3: import CSV from CAD programs!
- quick comparative of small grids in 2-layer soil

SHORT-CIRCUIT POTENTIALS FOR SUBSTATION GRIDS
- grid and surface potentials in 3D view
- touch, step and surface potentials in 2D view

DESCRIPTIVE, CHARTS AND TABLES REPORTS
- export to PDF, TXT, XLS, CSV and JPG
- print or copy to another program
- materials list, costs of materials and manpower, and time to built

COMPARATIVE CHART ANALYSIS OF SEVERAL GRIDS

INCLUDES DIGITAL EDITION OF OUR BOOK: 'GROUNDING GRIDS'

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Resistivity - soil data

Using up to 8 measurement axis at a time, TecAt stratifies the soil in 2-, 3- or 4-layer model, with a numerical calculation, without the errors of graphical/manual methods - it not only gives you the best possible result, you can even check the errors of some stratification you got with another method or software!

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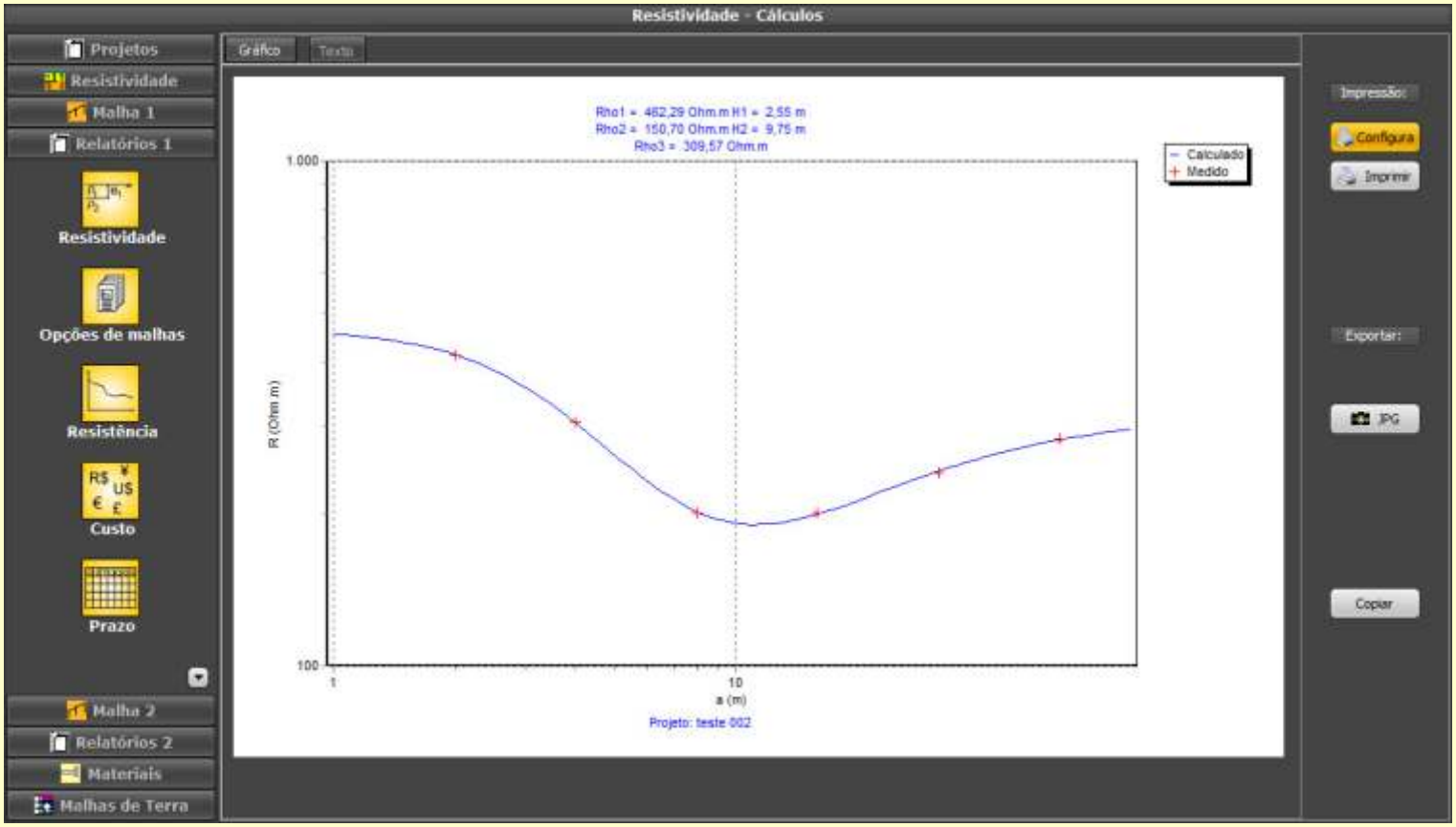
Resistivity - graph report



The stratification is then presented on a logarithmic chart and also a text report (see next)

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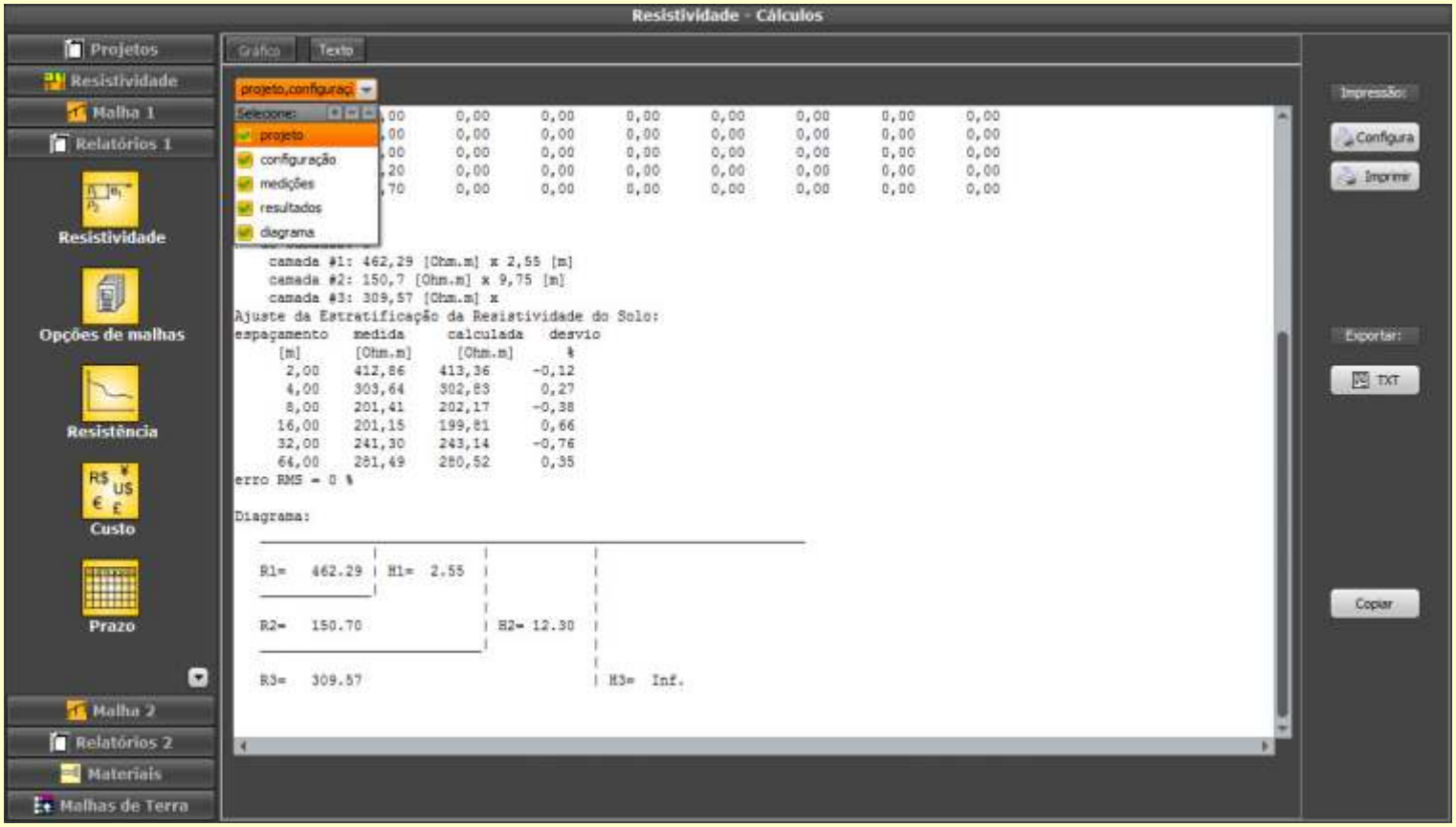
Resistivity - text report



Select the data you want at the report, including deviations for each point and RMS of the whole set, proportioning full certainty of the adjustment between field data and calculated curve.

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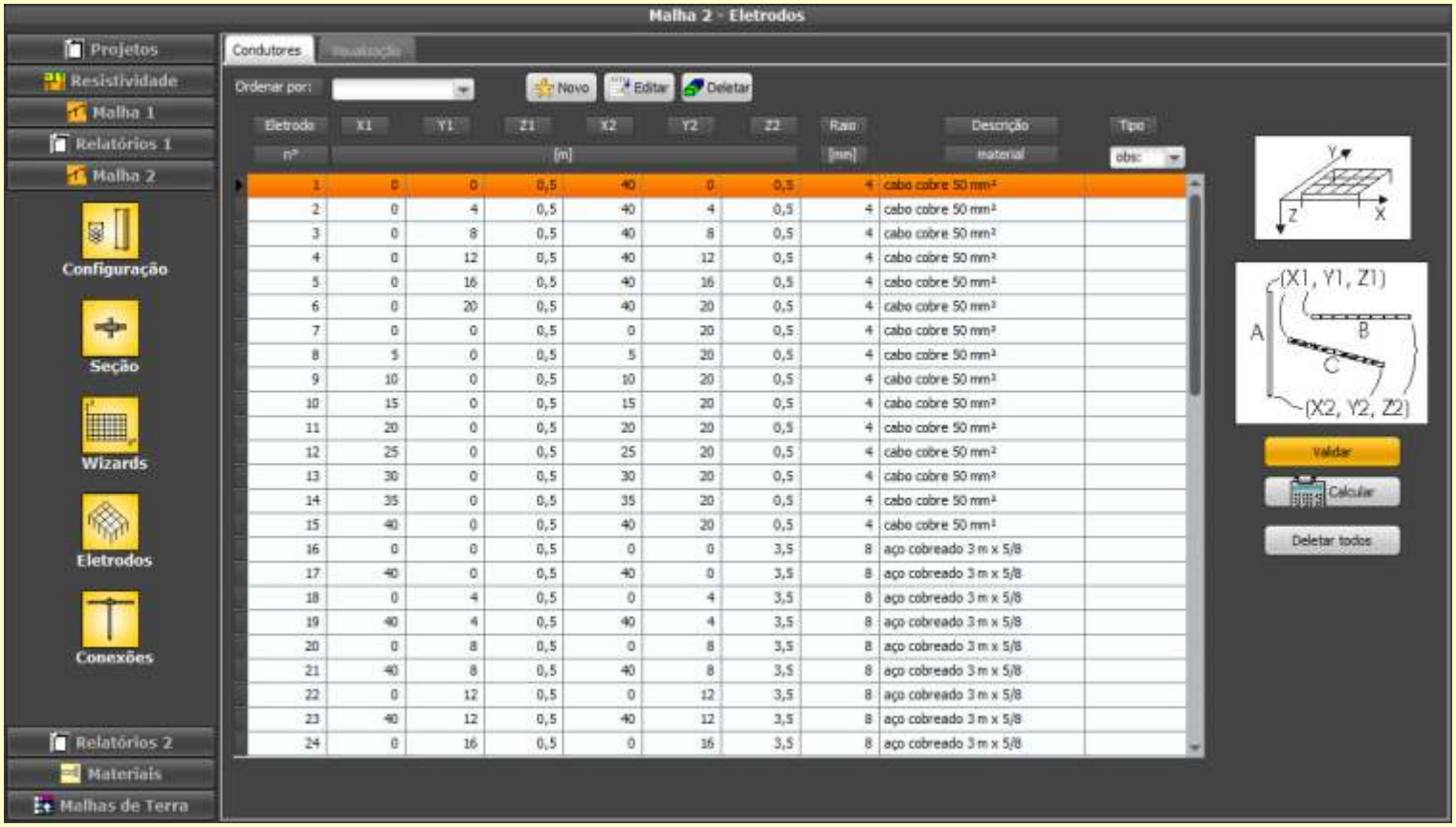
Grid 2 module: complex grids



Grid 2 module for complex grids, substations: you can enter each electrode or use the ‘wizards’ for automatic generation;
new: import existing grid on a CAD program using CSV file!

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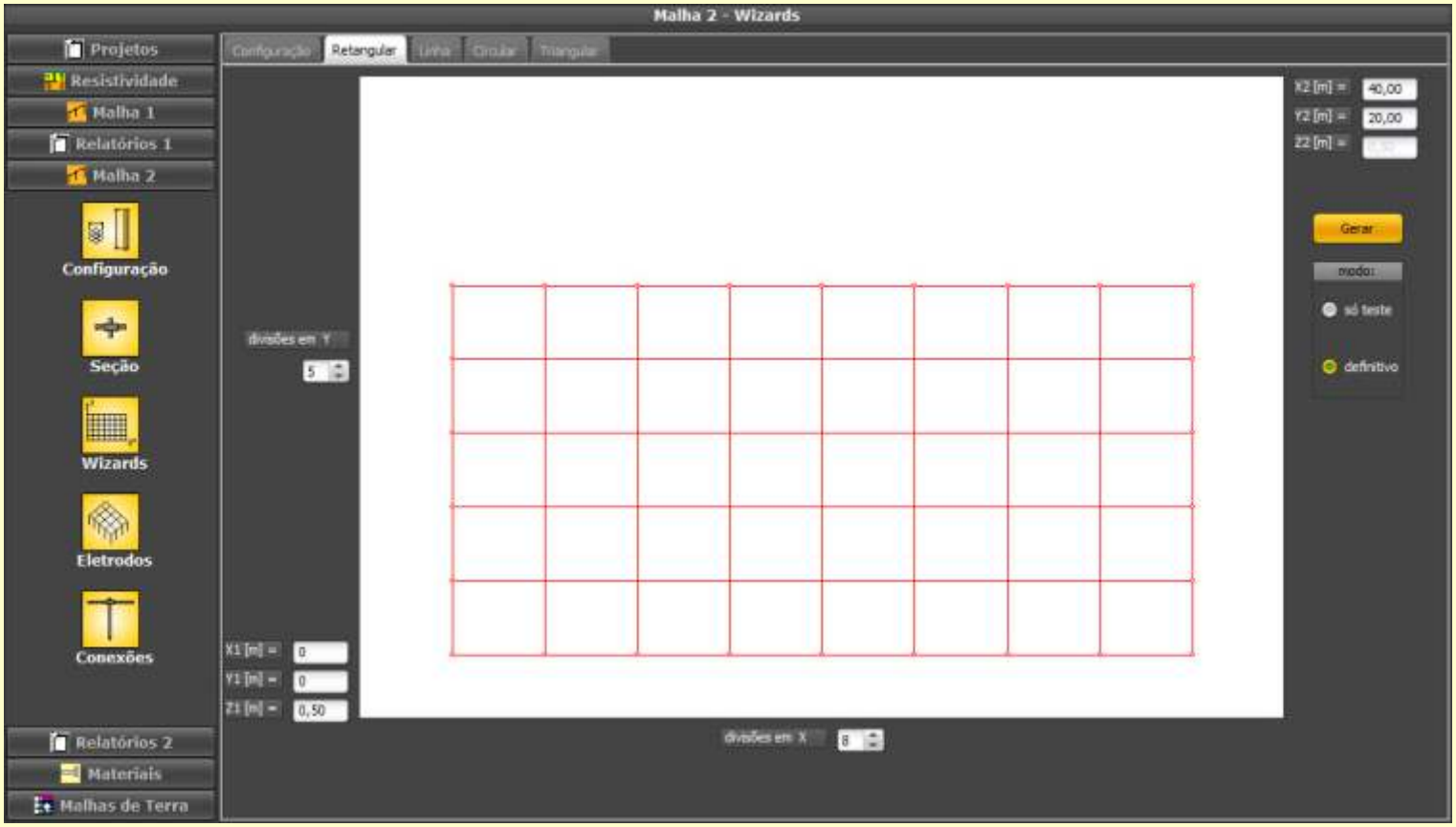
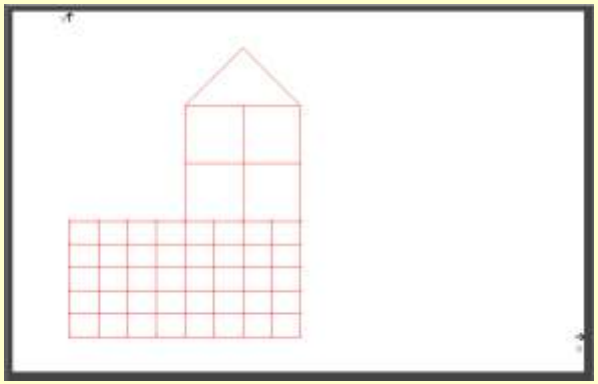
Grid 2 ‘wizards’



With TecAt ‘wizards’ you can generate automatically each regular portion of the grid; there are wizards for rectangular, linear, circular (poligon) and triangular portions, and the rectangular can have linear or geometric distance between cable lines (and its rods).
You can build complex designs instantly!



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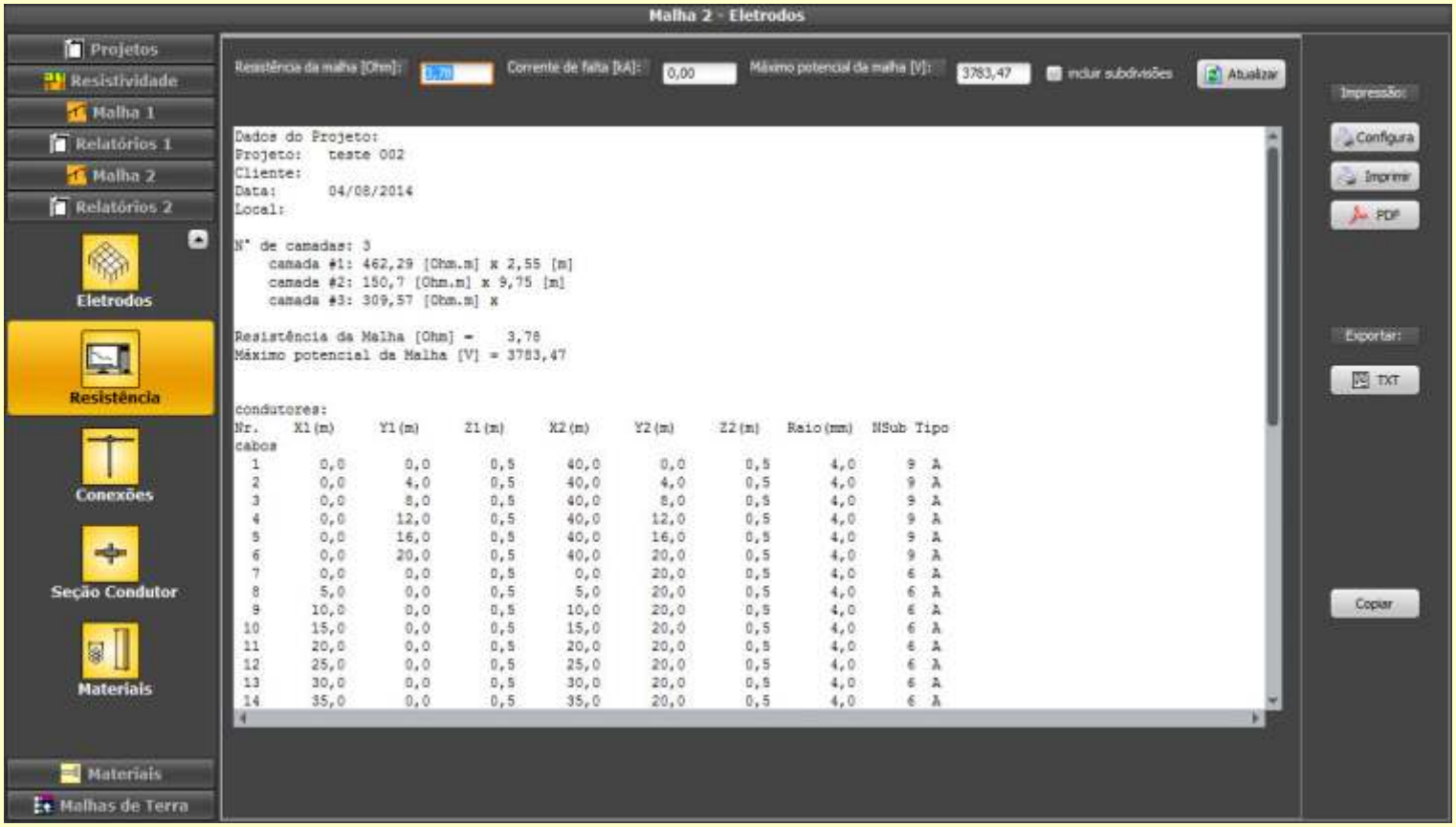
Resistance report



Text report with the resistance calculated and all the electrodes - you can also list the electrodes as divided for the calculations (for better precision)

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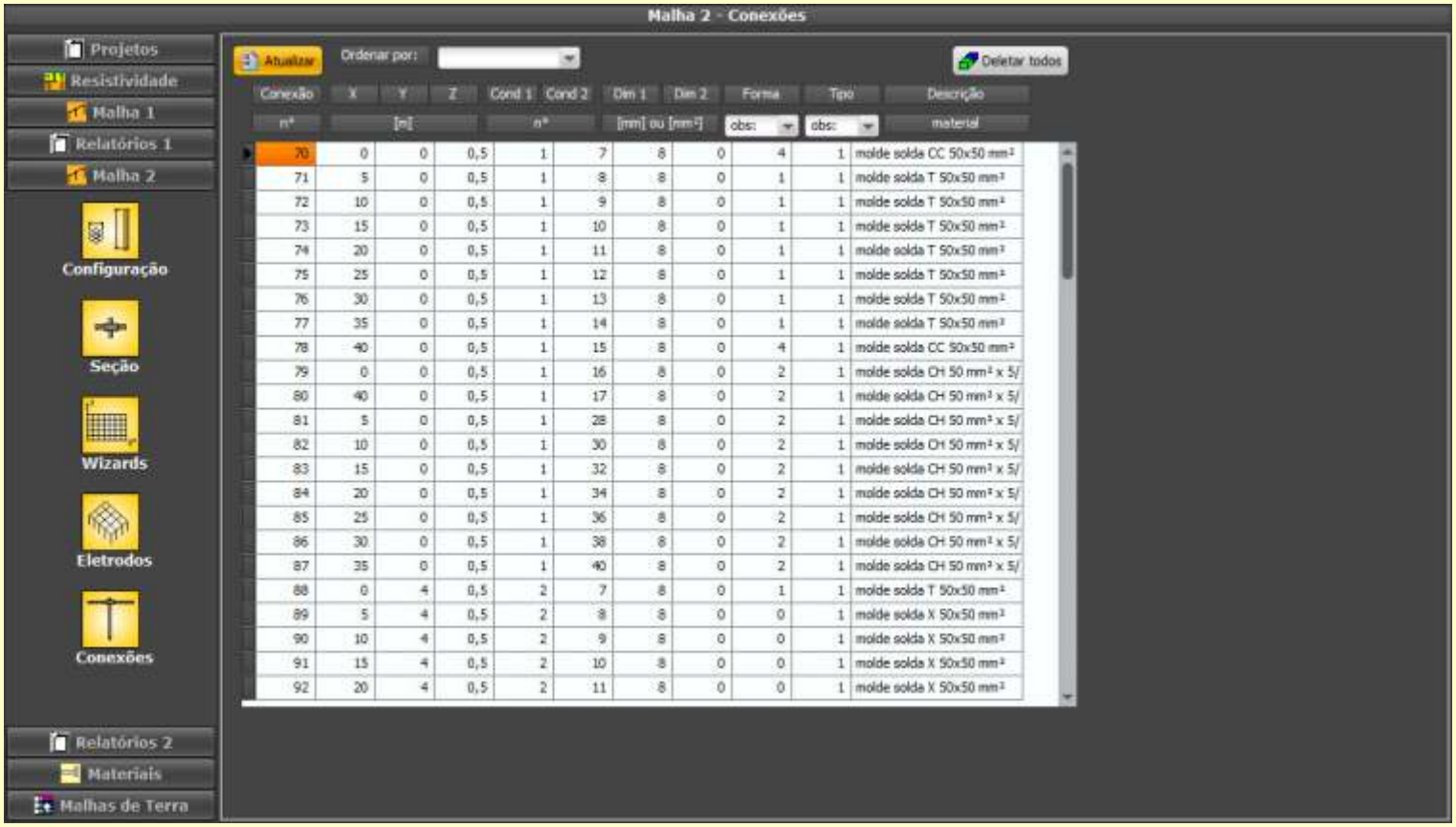
Connections report



Conexão	X	Y	Z	Cond 1	Cond 2	Dim 1	Dim 2	Forma	Tipo	Descrição
nº	[m]			nº		[mm] ou [mm²]		obs:	obs:	material
70	0	0	0,5	1	7	8	0	4	1	molde solda CC 50x50 mm²
71	5	0	0,5	1	8	8	0	1	1	molde solda T 50x50 mm²
72	10	0	0,5	1	9	8	0	1	1	molde solda T 50x50 mm²
73	15	0	0,5	1	10	8	0	1	1	molde solda T 50x50 mm²
74	20	0	0,5	1	11	8	0	1	1	molde solda T 50x50 mm²
75	25	0	0,5	1	12	8	0	1	1	molde solda T 50x50 mm²
76	30	0	0,5	1	13	8	0	1	1	molde solda T 50x50 mm²
77	35	0	0,5	1	14	8	0	1	1	molde solda T 50x50 mm²
78	40	0	0,5	1	15	8	0	4	1	molde solda CC 50x50 mm²
79	0	0	0,5	1	16	8	0	2	1	molde solda CH 50 mm² x 5/
80	40	0	0,5	1	17	8	0	2	1	molde solda CH 50 mm² x 5/
81	5	0	0,5	1	28	8	0	2	1	molde solda CH 50 mm² x 5/
82	10	0	0,5	1	30	8	0	2	1	molde solda CH 50 mm² x 5/
83	15	0	0,5	1	32	8	0	2	1	molde solda CH 50 mm² x 5/
84	20	0	0,5	1	34	8	0	2	1	molde solda CH 50 mm² x 5/
85	25	0	0,5	1	36	8	0	2	1	molde solda CH 50 mm² x 5/
86	30	0	0,5	1	38	8	0	2	1	molde solda CH 50 mm² x 5/
87	35	0	0,5	1	40	8	0	2	1	molde solda CH 50 mm² x 5/
88	0	4	0,5	2	7	8	0	1	1	molde solda T 50x50 mm²
89	5	4	0,5	2	8	8	0	0	1	molde solda X 50x50 mm²
90	10	4	0,5	2	9	8	0	0	1	molde solda X 50x50 mm²
91	15	4	0,5	2	10	8	0	0	1	molde solda X 50x50 mm²
92	20	4	0,5	2	11	8	0	0	1	molde solda X 50x50 mm²

TecAt automatically locates every electrodes junctions of the grid and, using the selected components from the material database, builds the full list of connections

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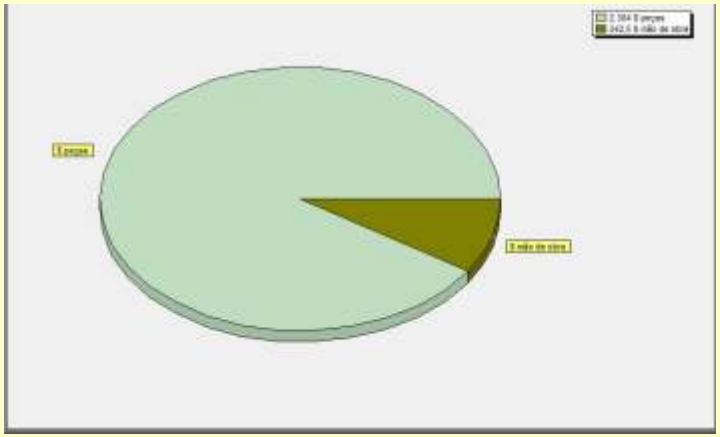
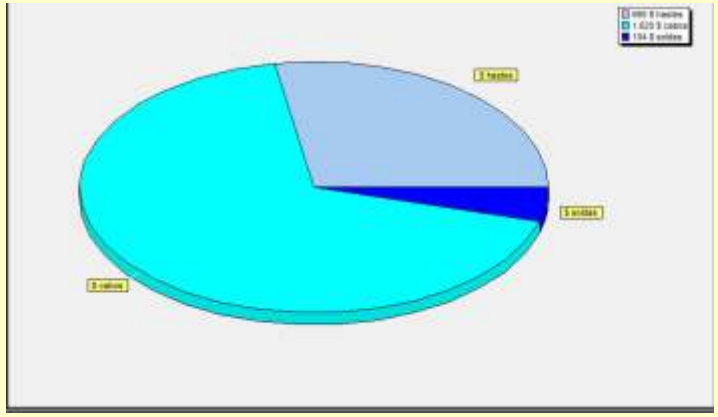
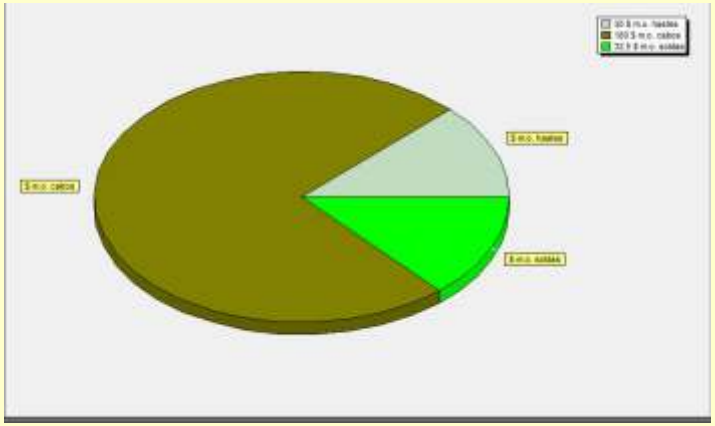
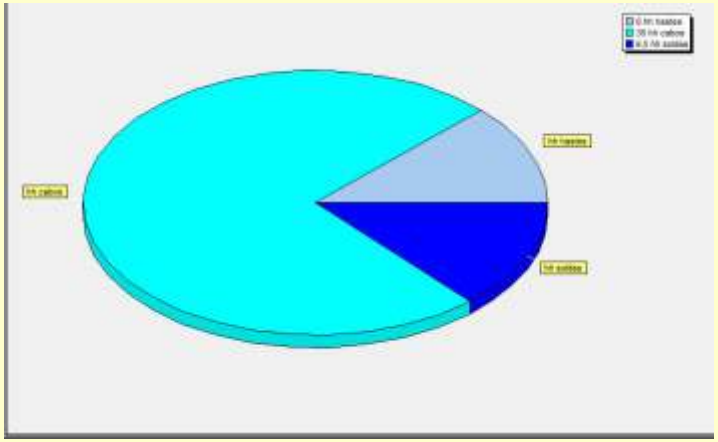
Software for grounding grid design

Cost and time analysis









For each grid, you can compare the costs between materials and manpower for the whole grid, costs and manpower from cables, rods and connections and the time to build the grid

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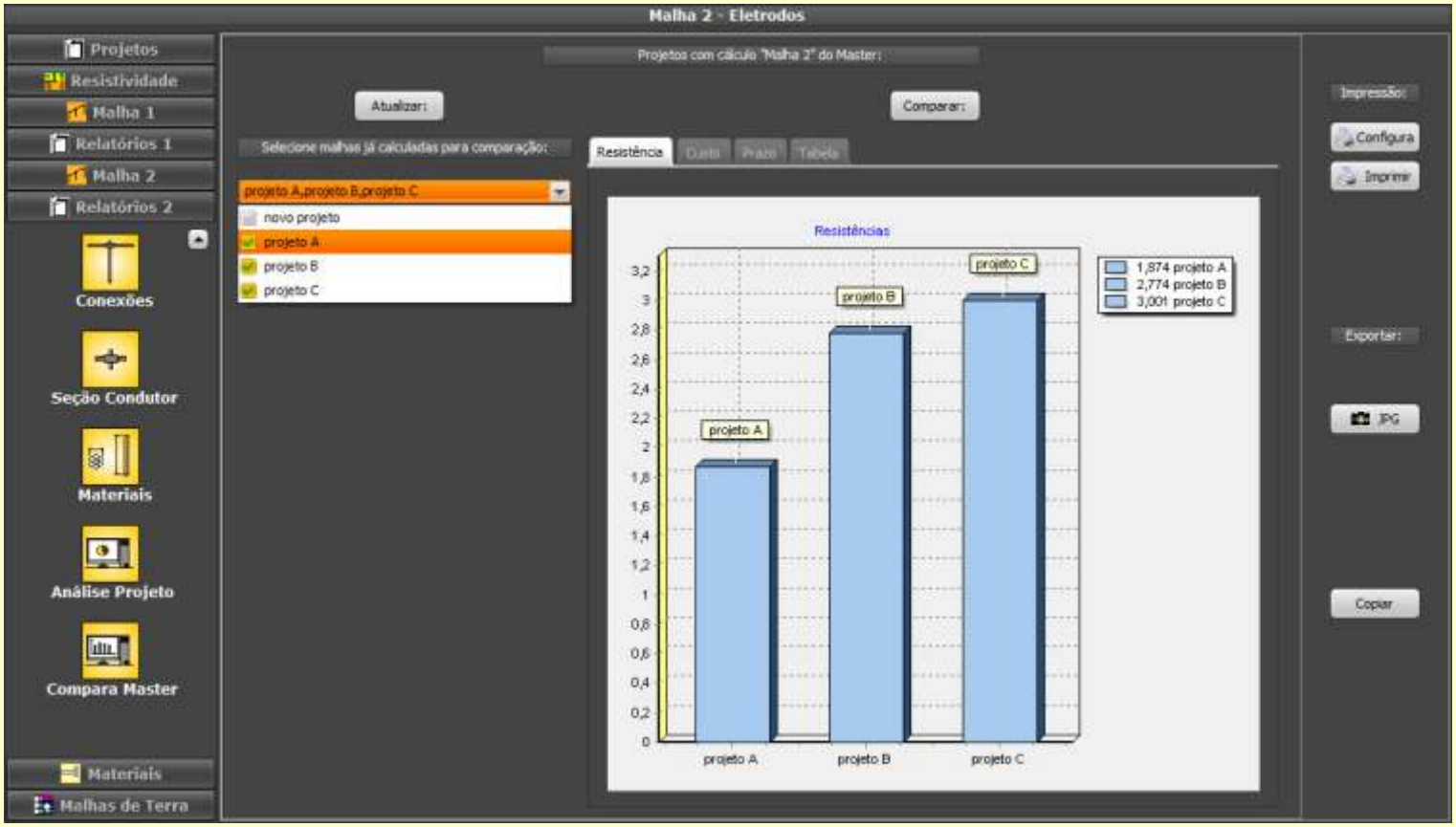
Comparative between grids



You can group several grids on the same ‘Master’ file, then, after calculating each one, compare the results for resistance, costs and time to build

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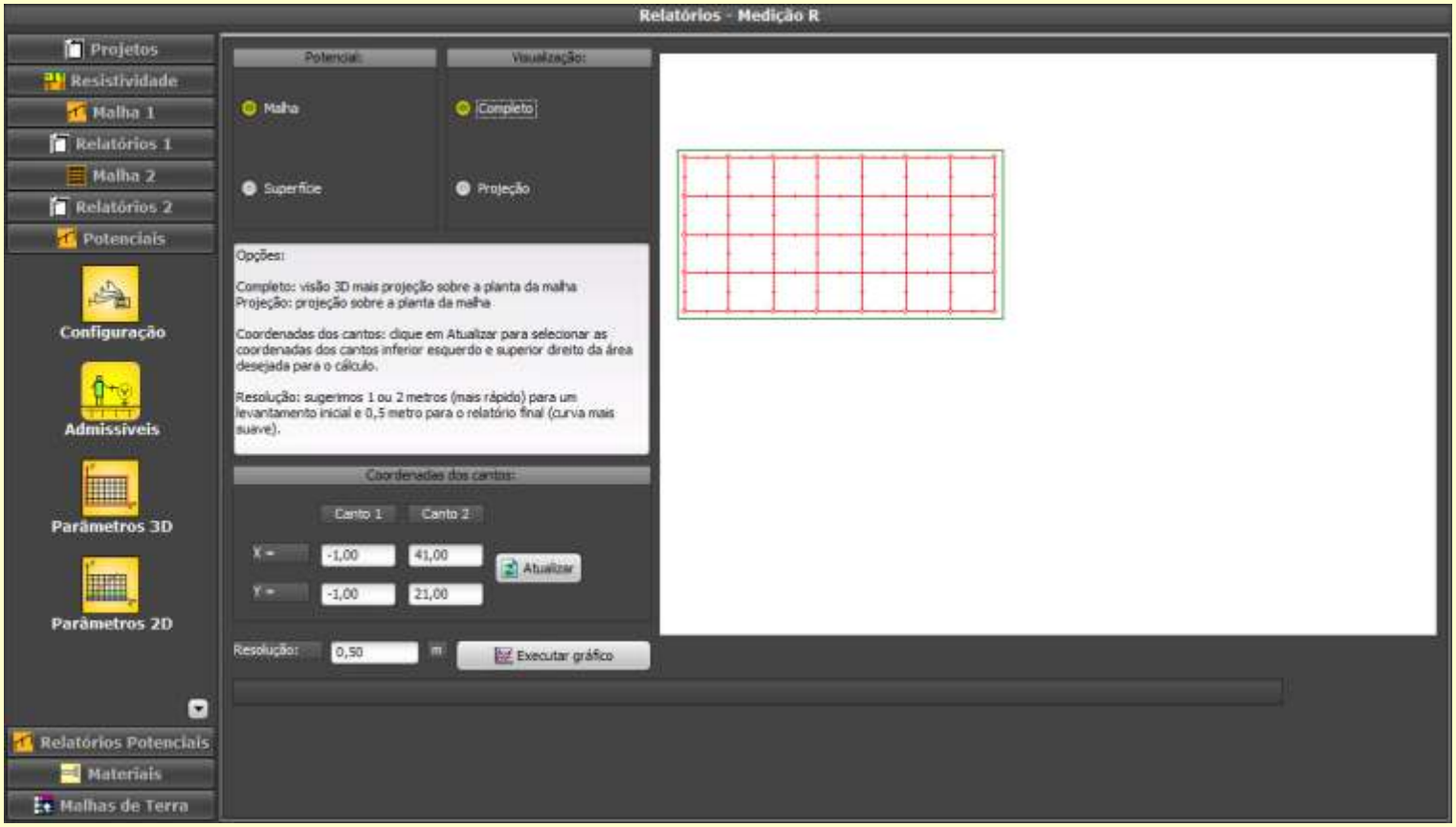
Software for grounding grid design

Potentials module: defining the area



For the 3-D view of grid and surface potentials, you can set the desired area - the full grid, part of it or the surrounding area;
you can also set the chart resolution to get a better speed while defining the grid, then draw it again with a more smooth surface

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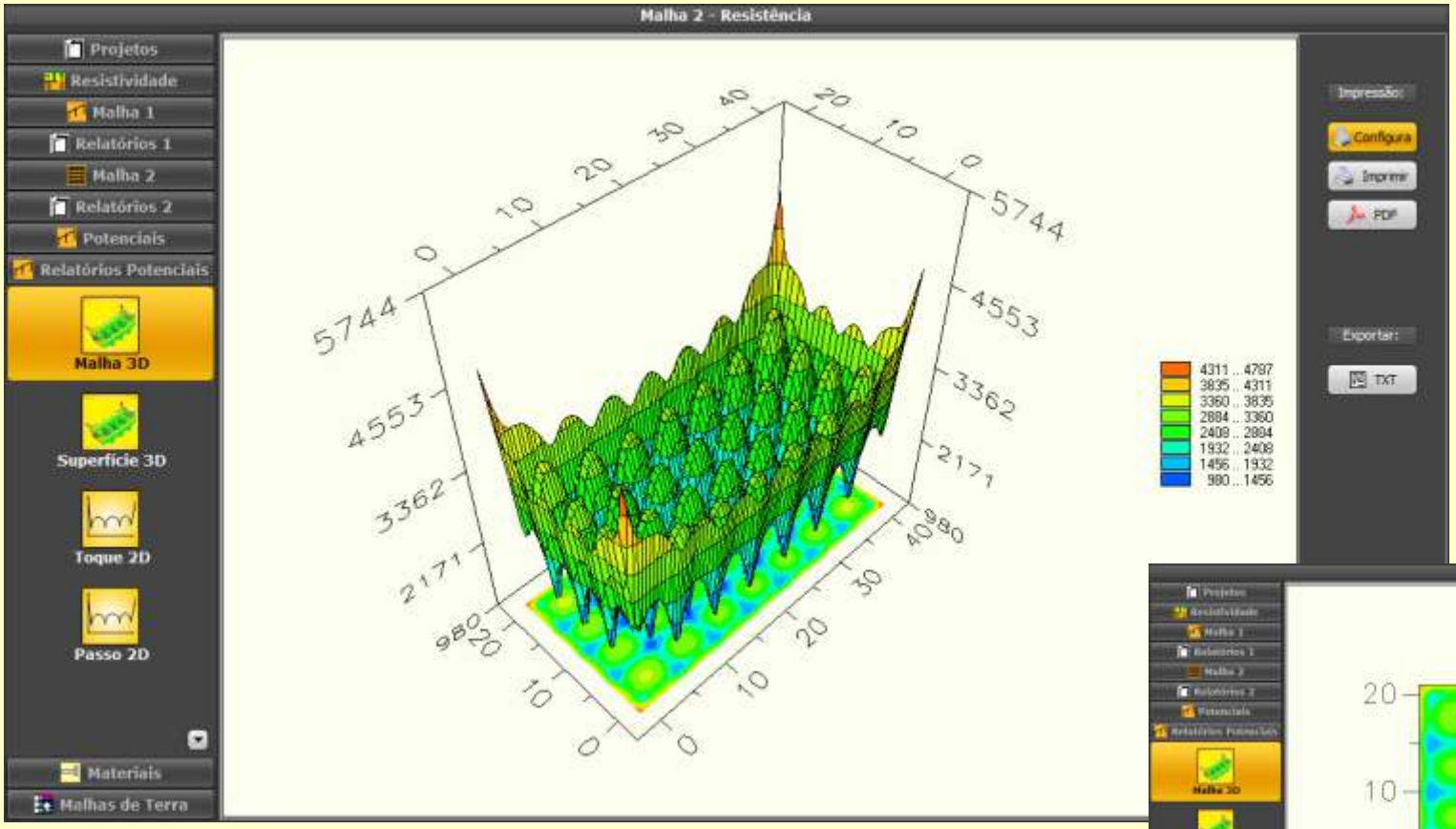
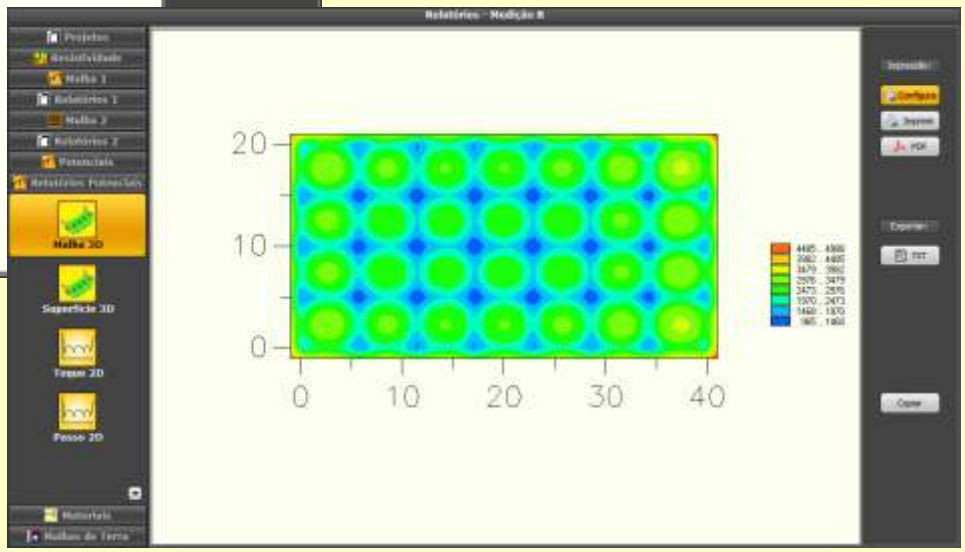
Potentials module: 3-D view





For the 3-D view of grid and surface potentials, you can set the desired area - the full grid, part of it or the surrounding area; you can also set the chart resolution to get a better speed while defining the grid, then draw it again with a more smooth surface

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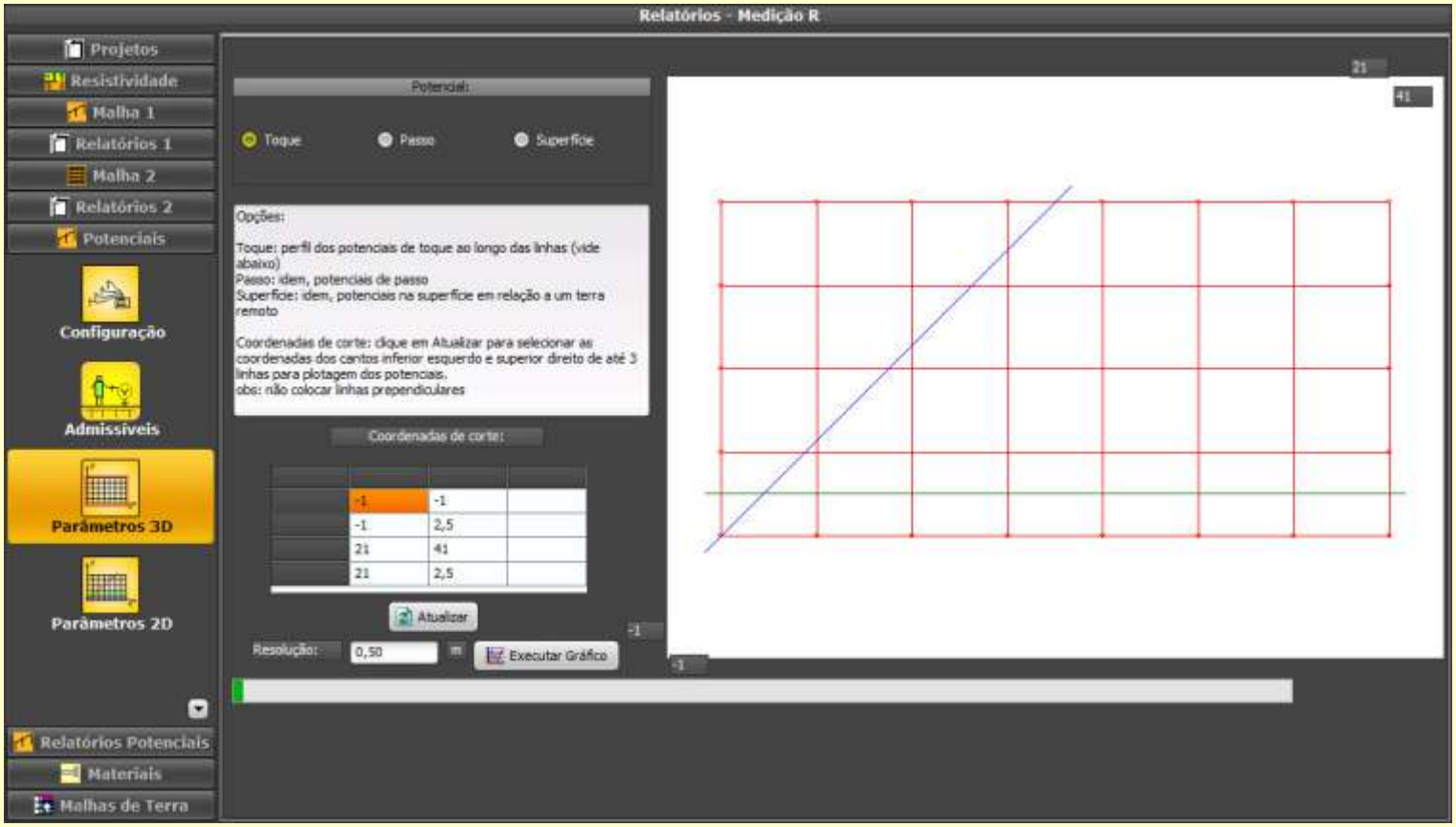
Potentials module: 2-D view



For the 2-D view of touch, step and surface potentials, you can set up to 3 lines at a time, including coordinates outside the grid;
as in the 3-D view, you can also set the chart resolution

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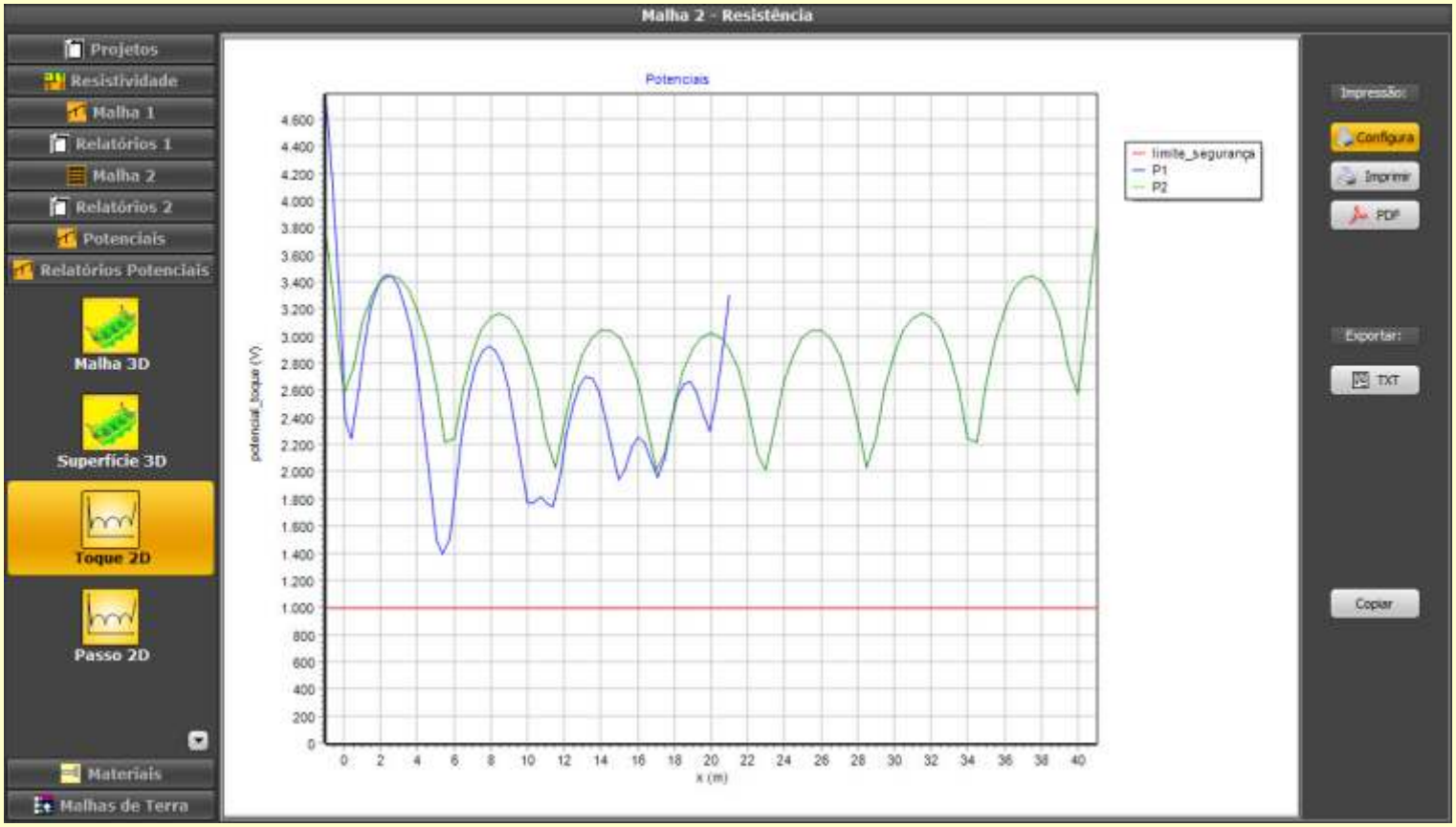
Potentials module: 2-D view



At the 2-D view of touch, step and surface potentials, the potentials along each defined line is plotted, along with the tolerable touch/step potential (calculated separately - see next); for the surface potentials, the red line represents the GPR

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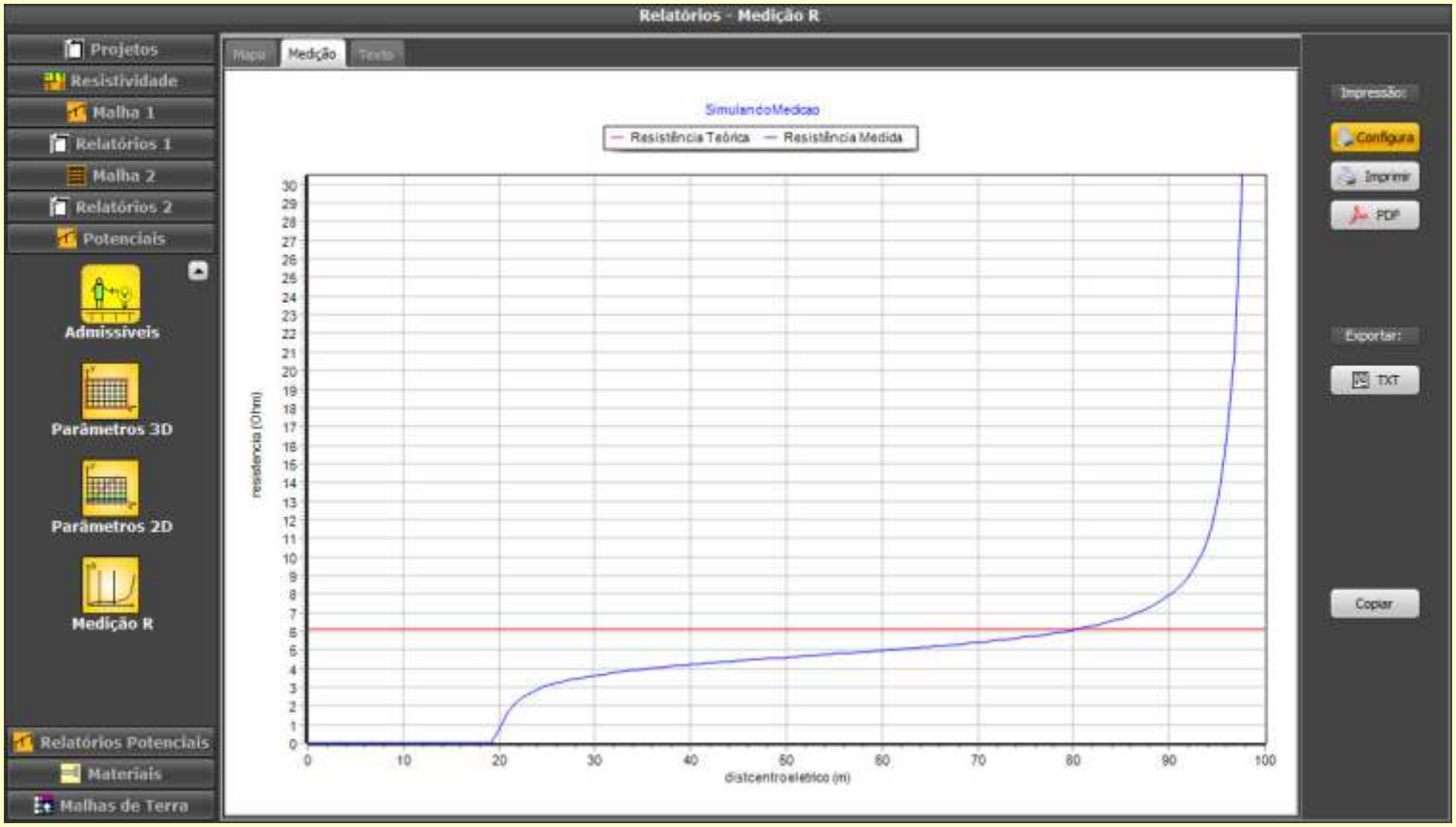
Resistance measurement simulation



An additional feature of TecAt is the possibility to simulate the resistance measurement after the grid is built on the given soil; that's very handy when you don't have enough space to perform a full measurement

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Auxiliary calculations

TecAt also has calculations for the conductor section and tolerable potentials (voltages);
for conductor section, there are all the standard predefined materials or you can enter your own parameters;
for tolerable touch and step potentials, TecAt uses the IEEE-80 formulation (you'll need the grid current and the short-circuit duration)

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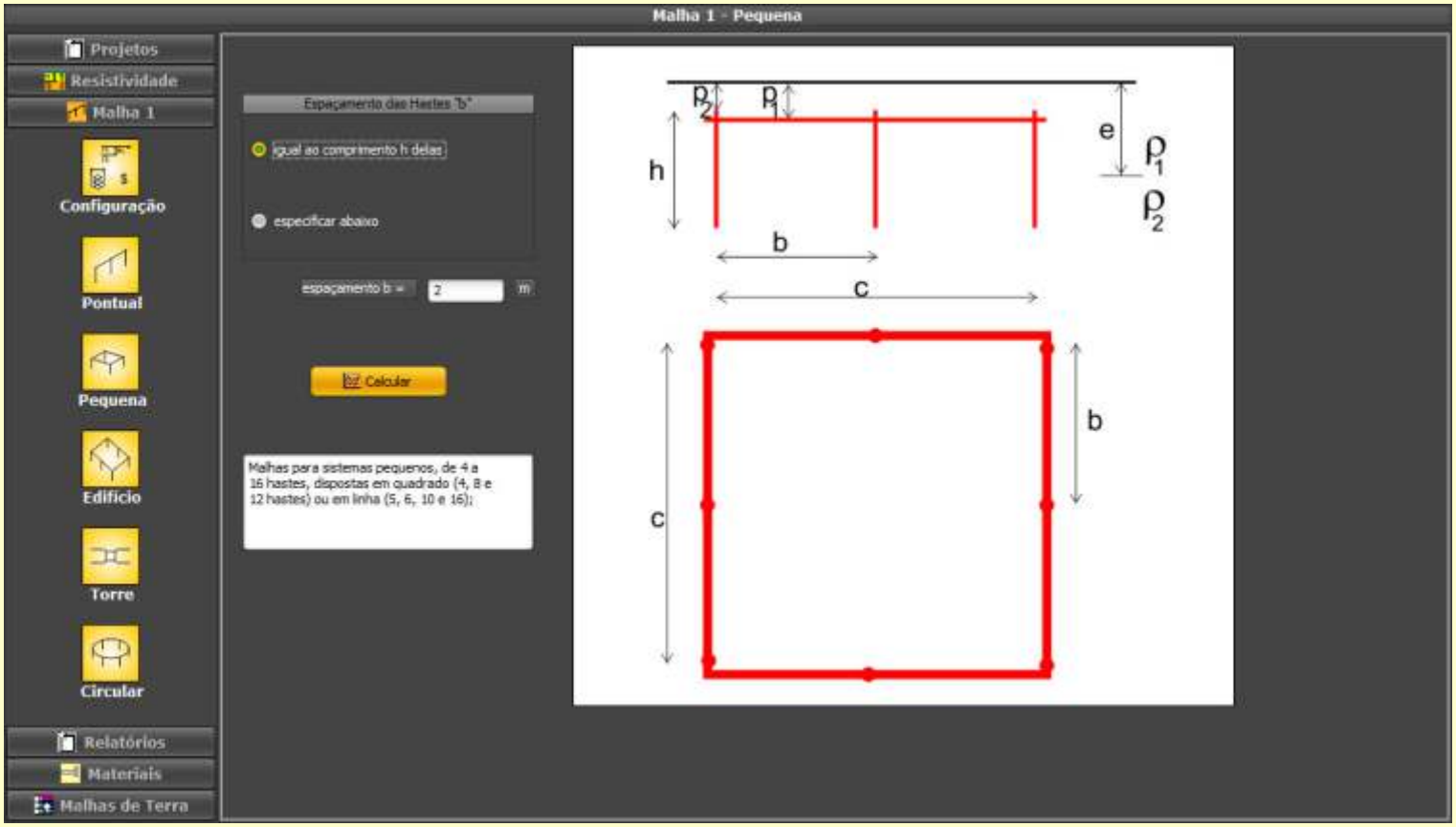
Grid 1 module: quick grid comparative



Besides the complex grid calculations in up to 4-layer soil on module Grid 2, the module Grid 1 gives you quick comparatives in 2-layer soil for several predefined configurations, like rectangular or circular (poligon) rings with up to 16 rods, with 3 rod lenghts

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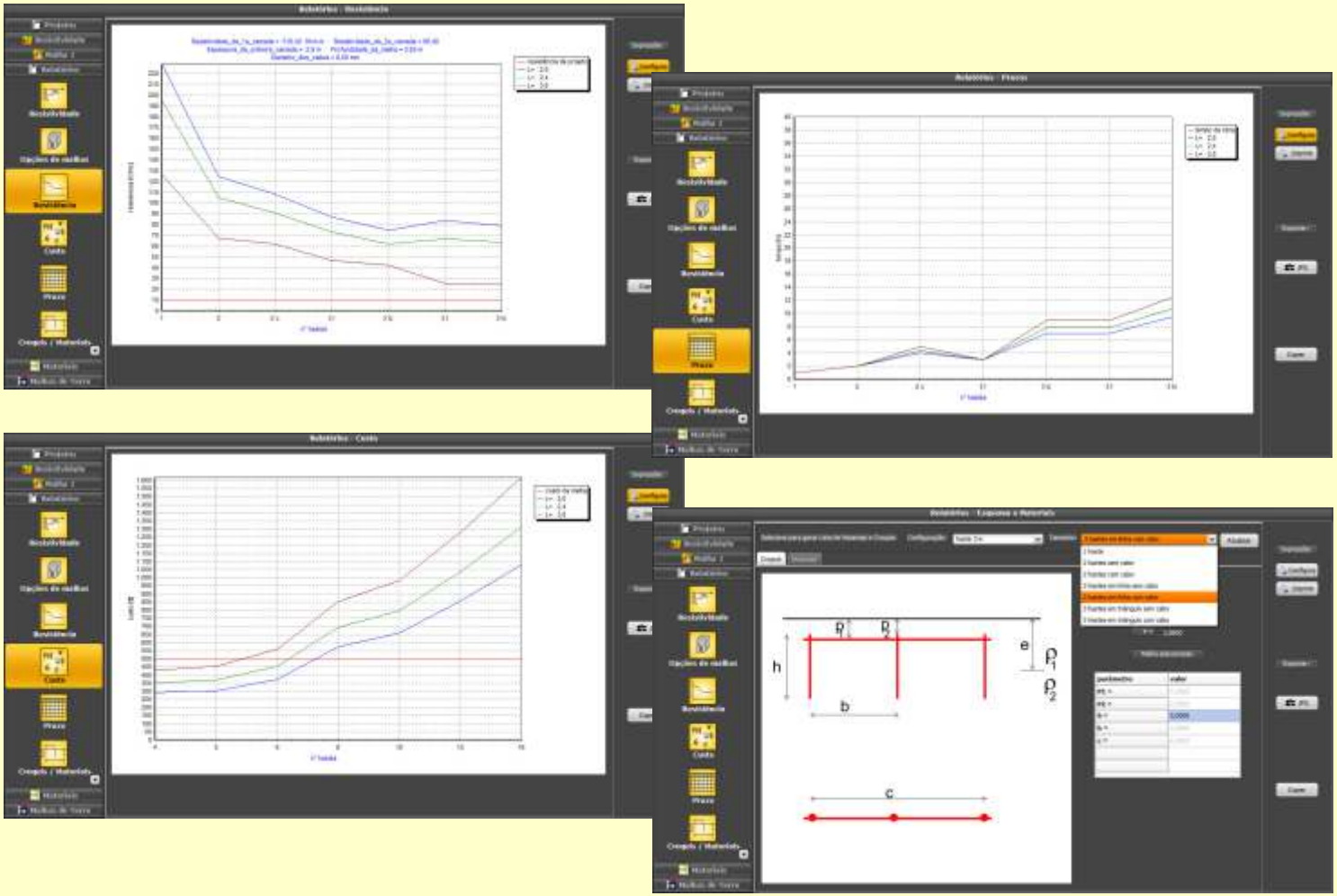
Grid 1 module: quick grid comparative



On the Grid 1 module, TecAt calculates instantly 21 different grids with the same configuration but different sizes, presenting comparative charts of resistance, cost and time to build; after you select the best solution for your case, you can generate its descriptive (with draft) and materials reports

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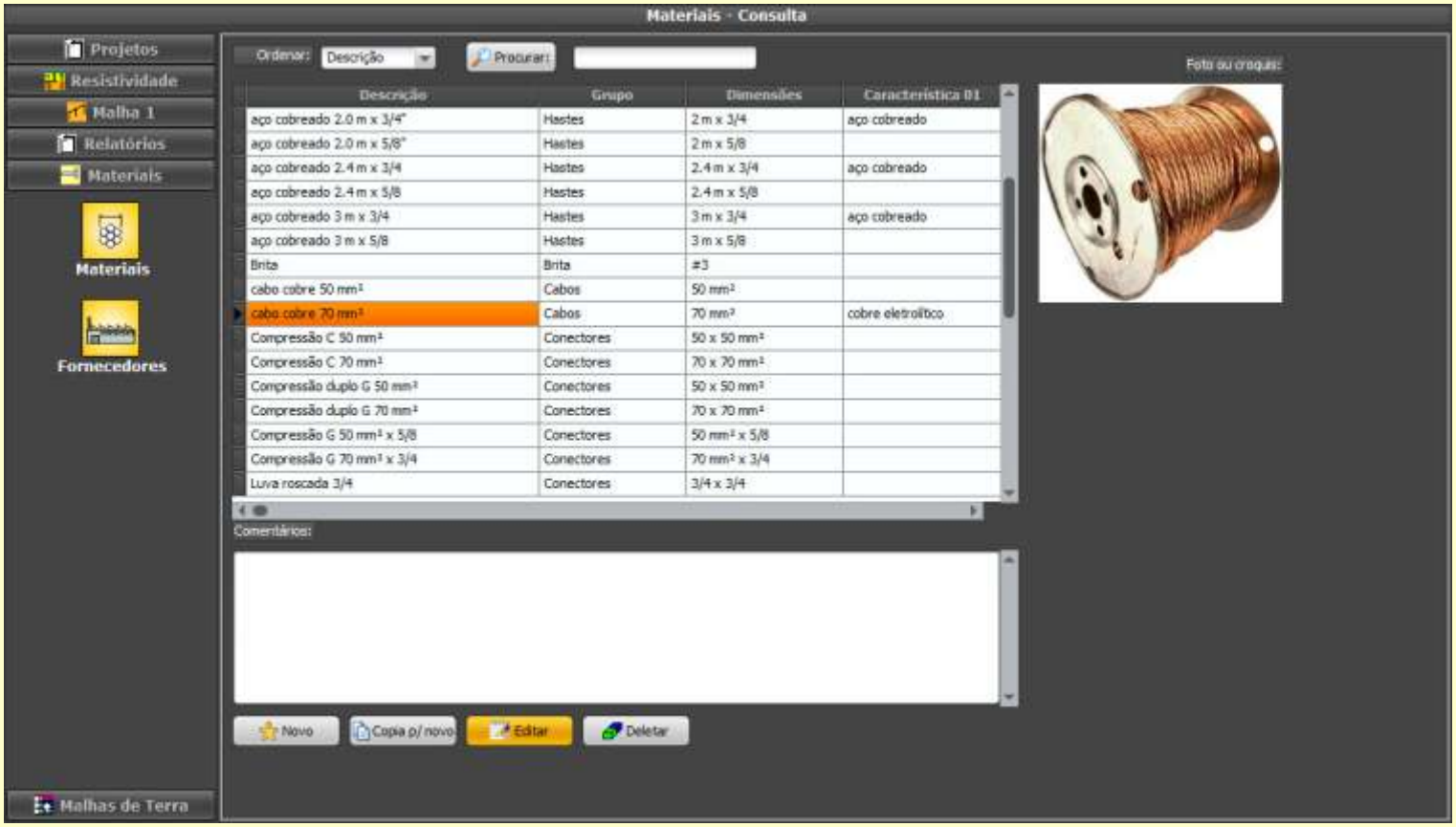
Materials database



TecAt has a database of materials and suppliers - it's fully editable and you can generate the data-sheet for each material.

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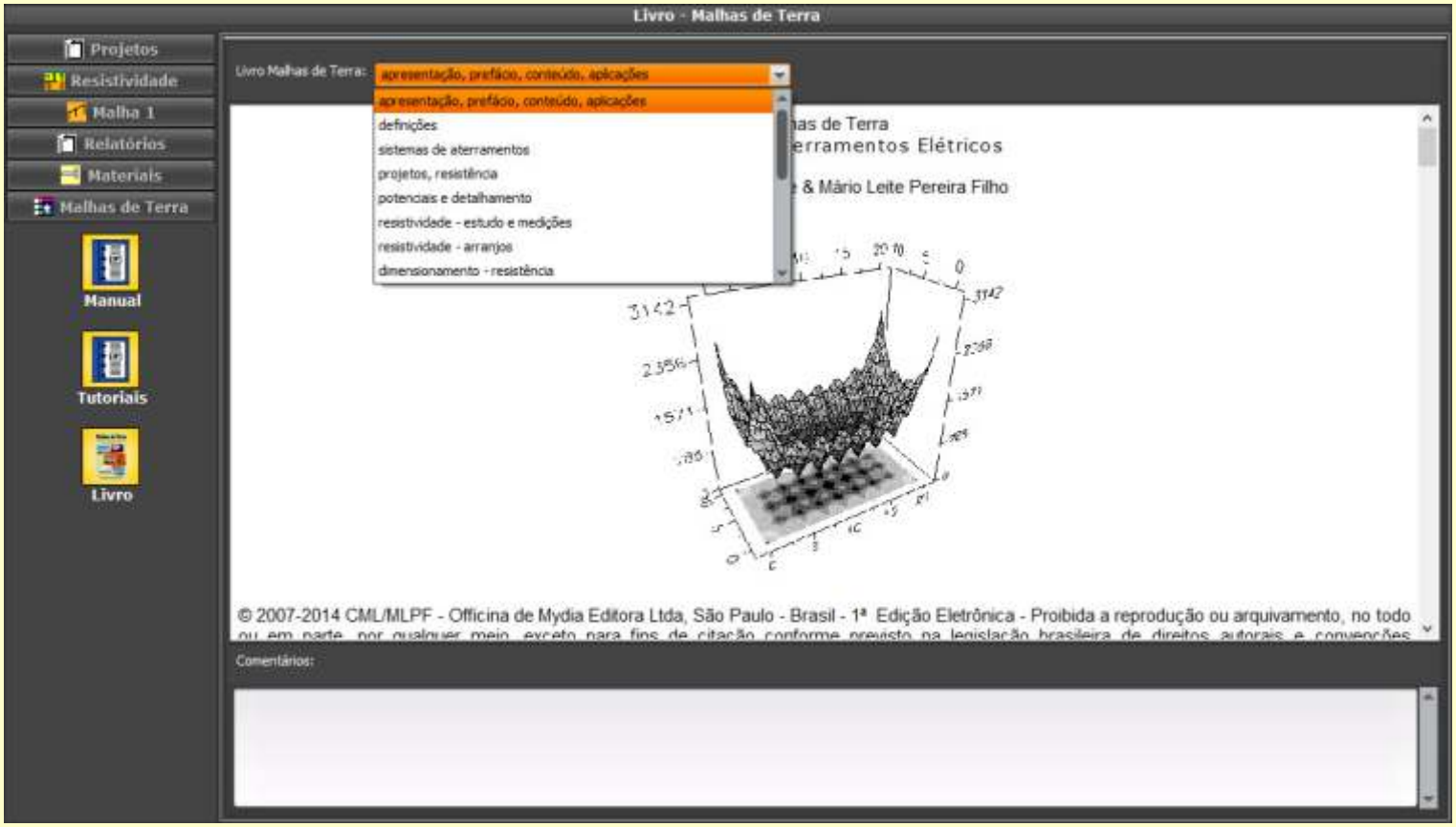
Documentation



From inside the program, you have access to the manual, some tutorials (more tutorials available at our site) and the book ‘Malhas de Terra’ (Grounding Grids) with all the theory - as we are revising the text and the book structure, it’s not translated to English yet, we hope to finish this as soon as possible (honest!) and, of course, all users will receive this update.

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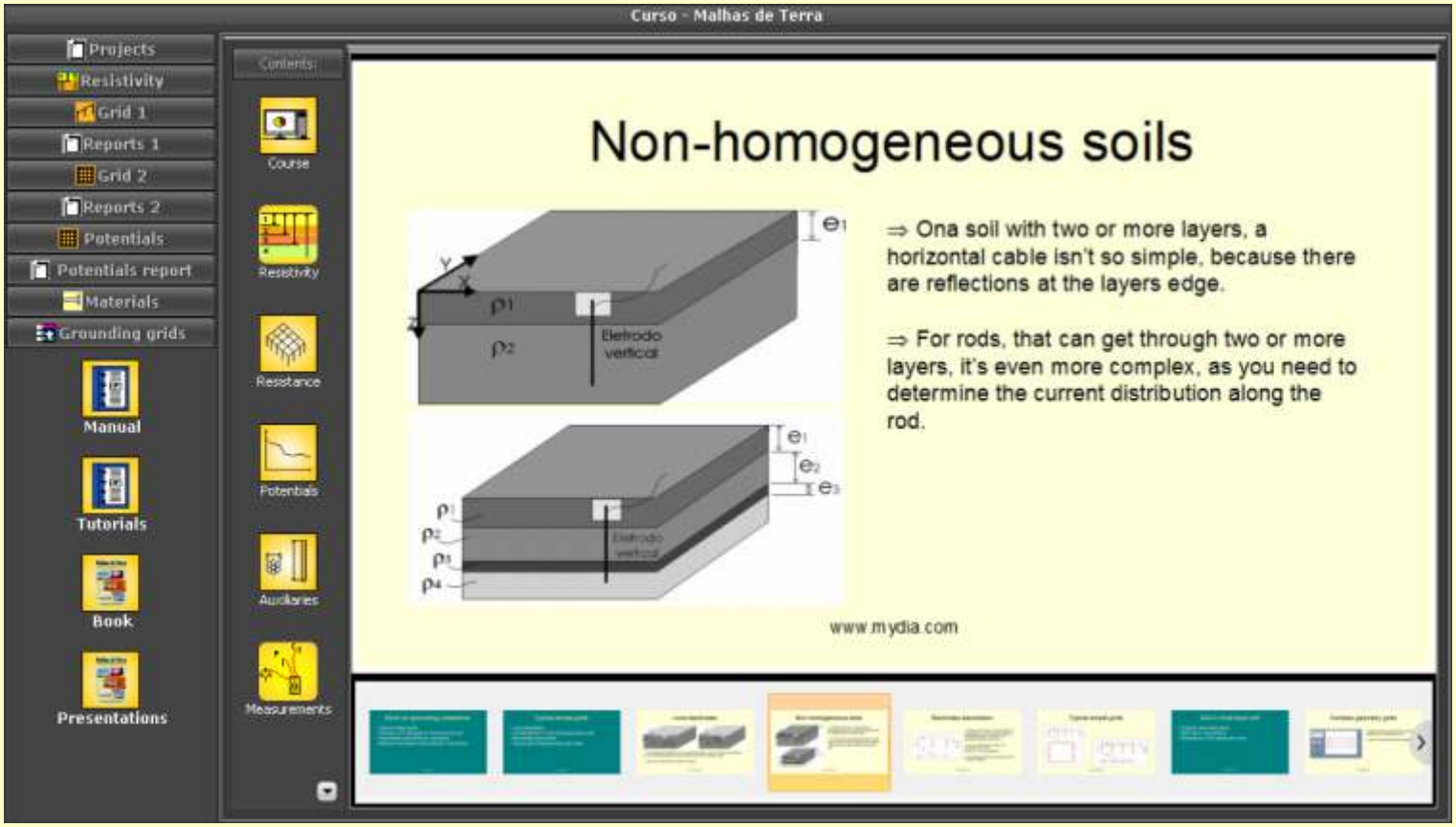
Course presentations



TecAt also has all the presentation slides from our classroom course, divided in logical groups.

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ANY MAJOR STANDARD [1]	IEEE 80, IEEE 81, NBR 7117, NBR
MULTI-LANGUAGE [2]	English; Português, Español
MULTI-USER	mono-user version multi-user: 2 users or more on the same network
SOIL STRATIFICATION	Wenner and Schlumberger[3] methods fully numerical calculation generates 2-, 3- and 4-layer stratification
GRID RESISTANCE	Full no-excuses numerical computation Grid in 2-, 3- or 4-layer soil Any grid format, any size electrodes
TOUCH, STEP AND SURFACE POTENTIALS	Full no-excuses numerical computation Grid in 2-, 3- or 4-layer soil 2-D and 3-D view
MATERIALS LIST	Materials database (fully editable) Detailed and consolidated lists Data-sheet for each component
QUICK 2-LAYER OPTION	Several pre-defined models Instantaneous calculation and analysis 21 grids resistance compare
REPORTS in PDF format	Export to PDF All reports (texts, charts) can be copied to paste on another software

More on the web:
www.voltsandbolts.com

TecAt page:
www.voltsandbolts.com/grounding/grounding_tecat.htm

Examples, tutorials, manuals:
www.voltsandbolts.com/howto/docs.htm

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Small brochure:
www.voltsandbolts.com/download/tecat_x1_sm.pdf

notes:
[1] - ask for specific details
[2] - for both program and reports; Spanish for program only, more languages can be added as demand justifies it - if you can help translate to your language, please contact us at sales@voltsandbolts.com
[3] - Schlumberger support - see docs