

EVALUATION MATRIX FOR EARTH ELECTRODE AND ELECTROMAGNETIC ANALYSIS SOFTWARE LICENCES, MAINTENANCE AND SUPPORT

Mandatory Criteria (Gate Keepers):

If any of these criteria are not met the tender will be disqualified.

Criteria	Met? (Yes/No)
Does the software cater for Multilayer Soil Models (≥ 3 layers)?	
Does the software cater for Electrode frequency analysis?	
Does the software cater for Fault current distribution analysis of power lines / cable networks?	
Does the software cater for Safety analysis of earthing designs: Step, Touch and Transfer potential analysis?	
A “No” to any of the above questions will result in the tender being disqualified	

Weighted Criteria Evaluation:

Each submission will be assessed against the following criteria (shown below with their weightings):

Criteria	Reflected in	Criteria / Table weight
Product, Technical Support, Information and Documentation	Table 1	20%
Product features	Table 2	40%
Application Specifics	Table 3	40%
Total		100%

In addition, each table is subdivided into individually weighted items based on its importance. For each evaluation item per table, the extent to which submissions comply with the requirements shall be scored based on the following:

5	COMPLIANT Meet technical requirement(s) AND; No foreseen technical risk(s) in meeting technical requirements.
4 or 3	COMPLIANT WITH ASSOCIATED QUALIFICATIONS Meet technical requirement(s) with; Acceptable technical risk(s) AND/OR; Acceptable exceptions AND/OR; Acceptable conditions.
2	NON-COMPLIANT Does not meet technical requirement(s) AND/OR; Unacceptable technical risk(s) AND/OR; Unacceptable exceptions AND/OR; Unacceptable conditions.
0	TOTALLY DEFICIENT OR NON-RESPONSIVE

The “item weighted score” is calculated as follows:

$$\text{Item weighted score} = (\text{Item weight}) \left(\frac{\text{Item score}}{5} \right)$$

The “table weighted score” is calculated as follows:

$$\text{Table weighted score} = (\text{Table weight})(\text{Sum of Item weighted scores})$$

The overall (or total) score per tender received is the sum of the three table weighted scores.

Threshold: The score that each tenderer receives will provide a numeric basis for tender comparison. The minimum weighted average score required for an offering to be considered must be 80% or above.

TABLE 1: PRODUCT, TECHNICAL SUPPORT, INFORMATION AND DOCUMENTATION (weight 20%)

Item	Item description	Item weight	Item score criteria	Item score options	Item weighted score	Reference to Respondent's detailed information
1	Is Technical Support offered locally? If not, is it offered internationally?	30%	Both	5	30.0%	
			Local only	4	24.0%	
			International only	3	18.0%	
			None	0	0%	
2	Is Training offered locally or internationally and abroad? (Assume 10 students when costing)	15%	Local or international with accreditation program	5	15.0%	
			Local or international, without accreditation program	4	12.0%	
			No training	0	0%	
3	Are there International Company based Users of the software? How many and who are they?	1%	Yes > 20	5	1.0%	
			Yes < 20	3	0.6%	
			No	0	0%	
4	Is the software accredited by any International professional institutions? If so who? Eg. IEC. IEEE	2%	Yes	5	2.0%	
			None	0	0%	
5	What is the company's track record in terms of operational years' experience relevant to this software application?	1%	> 15 years	5	1.0%	
			7-15 years	3	0.6%	
			< 7 years	0	0%	
6	What is the average turnaround for requests or problems to be solved or resolved?	35%	2 days	5	35.0%	
			1 week	2	14.0%	
			Longer than a week	0	0%	
7	What technical manuals are available for the software on offer?	5%	Reference manual	5	5.0%	
			Partial manual or software	3	3.0%	
			None	0	0%	
8	Are there technical tutorials available on the use of the software?	5%	Tutorial samples with manuals	5	5.0%	
			Tutorials examples	3	3.0%	
			None	0	0%	

9	Does the system require a dongle to operate? Or can it be configured as a network licence?	3%	Network licence	5	3.0%	
			Dongles only	0	0%	
10	How many users can connect at once (network licence)?	3%	All available licences	5	3.0%	
			< 5	0	0%	
Table1 Total		100%				

TABLE 2: PRODUCT FEATURES (weight 40%)

Item	Item description	Item weight	Item score criteria	Item score options	Item weighted score	Reference to Respondent's detailed information
1	Are the IEC Standards for Human Safety Exposure part of the software? (Safety and EMF)	10%	Yes	5	10.0%	
			No	0	0%	
2	Are the EN Standards for Human Safety Exposure part of the software? (Safety and EMF)	10%	Yes	5	10.0%	
			No	0	0%	
3	Are the IEEE Standards for Human Safety Exposure incorporated in the software? (Safety and EMF)	10%	Yes	5	10.0%	
			No	0	0%	
4	Can Wenner and Schlumberger resistivity measurement values be entered and computed? Can they be used in the models of the software?	15%	Yes	5	15.0%	
			No	0	0%	
5	Can graphical layouts be imported into the software? If so, what format is supported? (*.dxf, *.dwg, *.dgn, etc.)	10%	Yes	5	10.0%	
			No	0	0%	
6	Can the software be used in an integrated CAD environment?	5%	Yes	5	5.0%	
			No	0	0%	
7	Does the software cater for Automatic Nodes Recognition?	5%	Yes	5	5.0%	
			No	0	0%	
8	Does the software cater for Automatic Span Division and Conditioning?	5%	Yes	5	5.0%	
			No	0	0%	

9	Is Self-Impedance part of the calculations of the software?	5%	Yes	5	5.0%	
			No	0	0%	
10	What Soil Parameters Frequency Dependence is catered for in the software?	5%	Frequency and permittivity	5	5.0%	
			Frequency or permittivity	2	2.0%	
			None	0	0%	
11	Does the software cater for Under Ground Systems (cables, etc.)?	5%	Yes	5	5.0%	
			No	0	0%	
12	Does the software cater for Time Domain Calculations?	10%	Yes	5	10.0%	
			No	0	0%	
14	Are the output results easily exported to other formats for ease of importing to other software packages? If so, what formats are available?	5%	Yes	5	5.0%	
			No	0	0%	
Table 2 Total		100%				

TABLE 3: APPLICATION SPECIFIC FEATURES (weight 40%)

Item	Item description	Item weight	Item score criteria	Item score options	Item weighted score	Reference to Respondent's detailed information
1	Soil resistivity analysis and soil determination-frequency dependence	5%	Yes	5	5.0%	
			No	0	0%	
2	Modelling complex earthing/ grounding analysis. Can it conduct fault current studies of an involved model or network, including power lines and cable networks?	20%	Yes	5	20.0%	
			No	0	0%	
3	Does the software cater for Resistive Coupling?	5%	Yes	5	5.0%	
			No	0	0%	
4	Does the software cater for Capacitive Coupling?	5%	Yes	5	5.0%	
			No	0	0%	
5	Does the software cater for Inductive Coupling?	5%	Yes	5	5.0%	
			No	0	0%	

6	Lightning shielding and protection analysis: Does the software cater for 3D Shield – Lightning Studies?	10%	Yes	5	10.0%	
			No	0	0%	
7	Lightning and surge transient analysis (High frequency event analysis)	5%	Yes	5	5.0%	
			No	0	0%	
8	Electrode improvement analysis and improvements	5%	Yes	5	5.0%	
			No	0	0%	
9	Electric and magnetic field analysis in substations and around power lines	5%	Yes	5	5.0%	
			No	0	0%	
10	Electromagnetic compatibility studies on layout of cables etc.	5%	Yes	5	5.0%	
			No	0	0%	
11	Must be able to conduct total interference studies (Substation, fences, drainage, surface layer, footing resistance, line towers, etc.)	10%	Yes	5	10.0%	
			No	0	0%	
12	Can it model fault current studies inside and outside of a substation, as well as under power lines?	20%	Yes	5	20.0%	
			No	0	0%	
Table 3 Total		100%				

Requestor: Mark Pepper



Date: 06/09/2022

Technical support: Theunus Marais



Date: 06/09/2022