

Cesit Ingegneria S.P.A.
www.cesit.net

Engineering Services

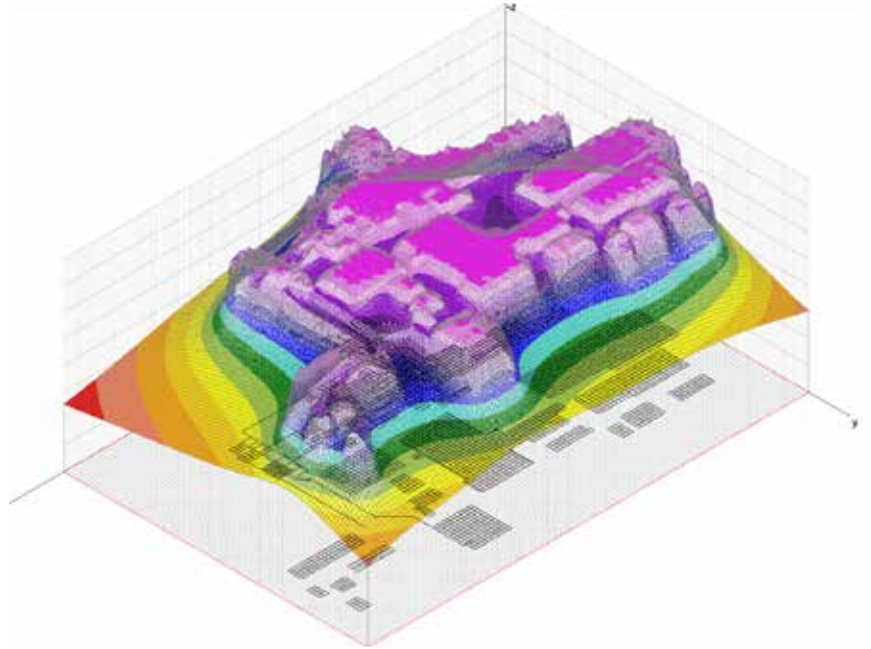
Network Calculations

Cesit Ingegneria S.P.A. provides consulting services with high scientific content, using the best simulation software. Our specific competencies have made Cesit Ingegneria S.P.A. a dependable partner for Italy's major power companies.

Cesit Ingegneria is a field-leader in the analysis of electrical power systems, and one of just a handful of companies providing this service in Italy.

In this arena, the Company offers consulting on:

- Static and dynamic power network calculations
- Power network protection selectivity studies
- Sizing of earthing systems



Electricity network calculations:

Symmetric and asymmetric AC/DC load-flow

Short-circuit calculation to IEC, VDE, ANSI/IEEE standards

Generalised short-circuit calculation with superimposed load-flow solution

Start-up testing of large motors

Simulation of electromechanical transients (in RMS values)

Simulation of electromagnetic transients (instantaneous values of phase parameters)

Network dynamic stability analysis

Network reduction

Coordination of protection systems

Testing of protection system response

CT saturation

Electromagnetic disturbance: voltage flicker, voltage variation with load, etc.

Penetration and flows of harmonic currents in the network

Ground Grid System: design of dissipaters for earthing systems (including for HV electricity substations)

Decrement factor (Df) to IEEE standards

Reduction factor of fault current to earth (r) to CENELEC or (Sf) IEEE standards

Dissipated current

Minimum cross-section of dissipater conductors for thermal stresses

Two-layer soil model parameters obtained from the apparent resistivity values measured

Surface-layer derating factor (Cs) of touch and step voltages to IEEE standards

Maximum touch and step voltages permitted under CENELEC or IEEE standards

Ground resistance and total ground voltage of each dissipater or buried electrode

Distribution of the dissipated current density with 3D graphic representation to verify the contribution and efficiency of dissipater parts

Distribution of earth potential and touch and step voltages on directrices or surface rectangular areas with 2D or 3D graphic colour representations, to rapidly identify areas with hazardous potential

Bill of materials used for the dissipater

Orthographic projection or isometric representation of the dissipate

