



The *SESShield-3D* software package allows you to analyze and design shielding systems for complex 3D environments.

Graphical Analysis and Design Program of Shielding Systems Against Lightning Strikes

Quickly perform a Lightning Shielding Analysis

Technical Highlights

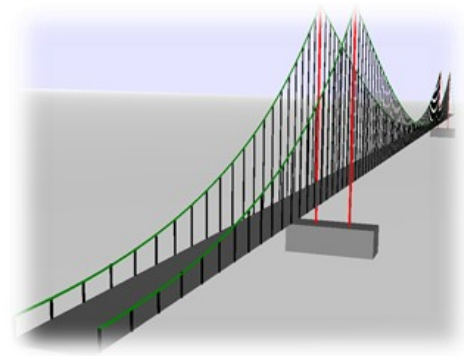
- ◆ Several elementary objects/object database with fully constructed objects
- ◆ Supports IEEE and IEC Methods
- ◆ Shielding Failure Analysis
- ◆ Import/Export geometries created with **SESCAD**[®]
- ◆ Several rendering style modes for the resulting analysis
- ◆ Typical functionalities of CAD applications

SESShield-3D is a powerful software package for the analysis and the design of lightning shielding protection systems for complex 3D environments, including transmission lines, substation equipment, buildings, etc. SESShield-3D allows arbitrary metallic structures to act as shielding systems (including shield-wires and masts).

User-friendly Interface

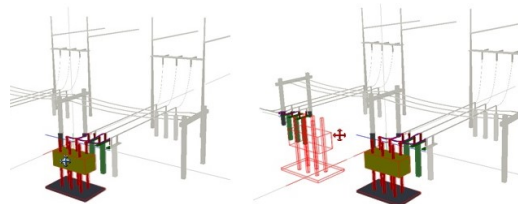
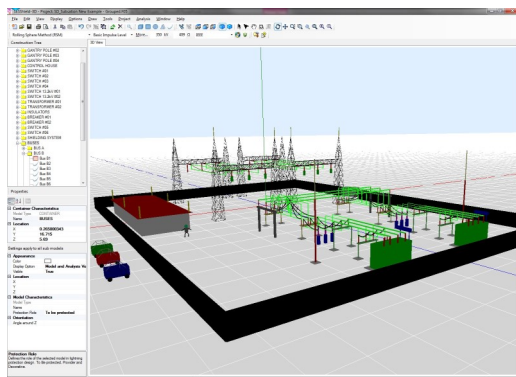
SESShield-3D offers a simple and intuitive user-interface that can be used to carry out a complete lightning shielding analysis for a system of arbitrary objects having various geometrical shapes. Several elementary objects are available to describe the system to analyze.

The Import from **SESCAD** functionality allows you to quickly analyze with SESShield-3D systems that were already modeled in **MALT**, **MALZ** or **HIFREQ**.



Controlling the Properties of Objects...

The **Construction Tree** provides an outline view of the system to analyze. This makes it easy to see how the different parts of the system were constructed.



SESShield-3D uses an object-oriented approach to describe the geometry that allows you to select, duplicate, move and, add or remove the objects in the graphical space.

The main characteristics of an object appear in the **Properties** window. Thus, the geometrical parameters and the characteristics of an object can easily be modified.

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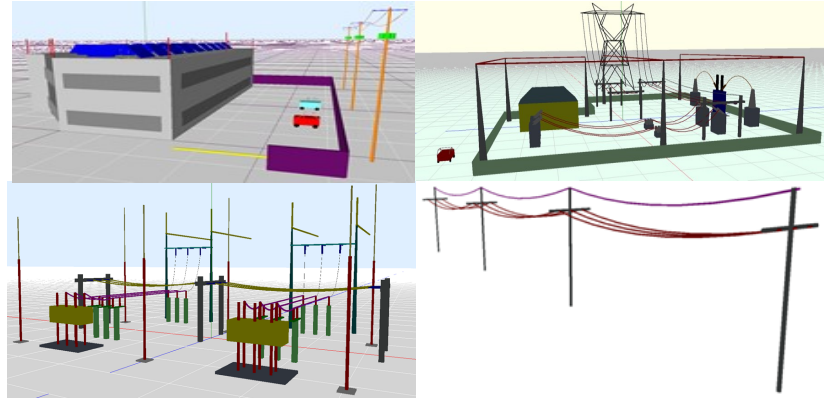
Several variants for calculating the size of the rolling sphere are available: you can either specify the Striking Distance or the prospective stroke current, or select a lightning protection level. Another possibility consists in specifying the minimum Basic Impulse Level and the Surge Impedance of the equipment in a given area of a substation.

...Starting the Computations...

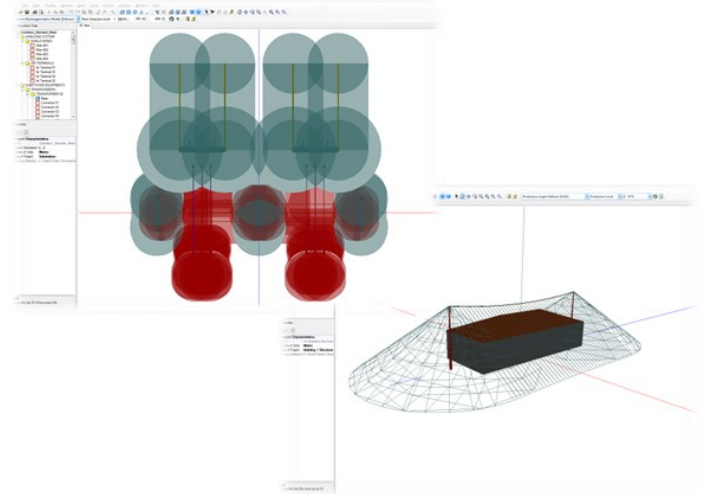
Four calculation methods are supported by SESShield-3D. These methods, described in the pertinent IEEE and IEC standards, are the **Rolling Sphere Method** which is based on the **Electrogeometric Model** and variations thereof, the **Eriksson Electrogeometric Model**, the **Protection Angle Method** and the **Mesh Method**.

SESShield-3D is highly interactive and visual. Once you have specified the geometry of the system and all basic numerical parameters, SESShield-3D makes efficient use of your graphics card to rapidly display in your working window all the volumes around your system from which lightning strikes to vulnerable equipment can originate.

The status bar alerts you to the presence of unprotected zones that you may not have noticed from your current view point.



A module called **Shielding Failure Analysis** will help you to assess the probability of failure of a lightning protection system, accounting for the statistical distribution of lightning in the area of the system to be protected.



...Analyzing the Results

Once the processing is finished, SESShield-3D displays the system with its corresponding protection volumes. Two colors (green and red by default) differentiate between what is protected (green) and what is not protected (red). Three rendering style modes are available: Solid, Transparent and Wire-Frame.

The system to analyze can be displayed in variety of ways. SESShield-3D offers several options that allow you to control the behaviour of the display for a better view angle of your system in the graphical area.

