



SIGNON SUITE

Verkehrssysteme optimal planen.

The solution is both complex and simple at the same time.

Simulating and designing transport systems need not be complicated. Complex simulations can now be easily implemented using the range of tools of the SIGNON SUITE. Whether trains, trams, subways or electric buses – the SIGNON SUITE can simulate your specific transport system and will tell you in advance what to look for and what to expect!



SIGNON
SUITE



SIGNON
SINAnet

Simulation program for DC systems for local and long-distance traffic



SIGNON
WEBAnet

Simulation program for AC systems for local and long-distance traffic



SIGNON
IMAFeb

Program to calculate operational impedances and the magnetic and electrical field distribution of catenary and contact line systems



SIGNON
GRAPH

Evaluation program for railway traffic simulation and network calculation data

Areas of application.

- » Determination of the load flow condition in the power supply network
- » Effect assessments of network configurations, network failures and vehicle types
- » Design of new power supply installations, review of calculations and optimisation of existing installations, including earthing installations
- » Testing the application possibilities of modern rolling stock on existing lines
- » Timetabling and calculation of journey times
- » Optimisation of existing transport systems and those in need of modernization with regard to journey times, traffic technology and power supply
- » Evaluation and design of energy storage systems for the efficient utilization of vehicle regenerative braking energy
- » Short-circuit current calculation, voltage drop calculation and maximum current calculation
- » Dimensioning and positioning of charging infrastructures for battery operated vehicles
- » Assessment and recommendation of suitable storage capacities and charging strategies for electric busses on the basis of the existing network and timetables
- » Expert assessments of questions related to electromagnetic compatibility (EMC)

Results.

- » **Tractive units**
condition, tractive force, braking force, speed, acceleration, current, performance
- » **Substations**
total current, bus bar voltage, total power, substation connection currents and power leakages
- » **Overhead lines**
minimum voltages, maximum currents in relation to time and location, temperature
- » **Total network**
energy balance, power transmission losses and specific energy consumption
- » **Charging stations**
number, distribution, type of connection, electrical dimensions
- » **Battery**
Energy storage and performance – output and input, charging strategy, load profile
- » Load distribution, voltages, performance factors and transmission losses in upstream three phase supply
- » Power distribution in overhead line systems
- » Magnetic fields around overhead line systems
- » Induced longitudinal voltages

References.

- » **Germany: Dresden tram system**
Rail traffic simulation and network calculation for the entire light-rail system.
- » **Germany: Suburban rail Berlin**
Rail traffic simulation and network calculations.
- » **Austria: Vienna tram system**
Network study and extended traction power investigations.
- » **Germany: Jena tram system**
New line "Göschwitz" – technical equipment planning according HOAI (architects and engineers remuneration scales), work phases 2 – 8 and network study.
- » **Germany: Suburban rail Hamburg**
Calculations to assess power losses in transmission networking.
- » **Switzerland: Trolleybus Lucerne**
Traction power simulation study and optimization.
- » **Germany: Leipzig tram system**
Rail traffic simulation and network calculation for the entire light-rail system and new trolleybus lines.
- » **Austria: St. Margrethen - Lauterach**
Determination of power distribution systems (AC 15 kV 16,7 Hz).
- » **India: Metro Lucknow**
EMC study (BT system, AC 25 kV 50 Hz) and network study (BT system, AC 25 kV 50 Hz).
- » **India: Metro Ahmedabad**
EMC/EMI study.
- » **Norway: Oslo – Follo Line**
Design calculations for AT system (2AC 15 kV 16,7 Hz).
- » **Austria: Brenner base tunnel**
Simulations for traction power supply equipment optimization (2AC 25 kV 50 Hz).

Interested?

A detailed product description of SIGNON SINAnet can be found at: www.elbas.de