



ELSYCA CatPro

CP and DC stray current analysis of pipeline networks

A state-of-the-art graphical simulation platform for the design and troubleshooting of pipeline cathodic protection and the investigation of DC stray current interferences.

Elsyca CatPro enables engineers to optimize CP designs and troubleshoot operational issues. Simulations of pipeline coating condition and cathodic protection levels provide deeper insight into survey data which results in more effective and robust ECDA and mitigation strategies.



Key Benefits

The Elsyca CatPro technology was fully developed in-house with leading oil and gas companies. Elsyca CatPro is much more advanced than the standard attenuation models since it additionally considers local coating quality, soil resistivity and polarization data along the pipeline routing, which can be varied for any number of sections. It has been validated through numerous industrial engineering projects with leading companies.

Model creation

Elsyca CatPro software is designed for the optimization of cathodic protection systems of large pipeline networks. Pipeline assets, railway systems or third party DC interference systems are entered through geographic coordinates.

Model refinement

Enter for user-defined pipeline sections the soil resistivity, coating condition, pipeline dimensions and define the rectifiers settings and anode bed properties. Add bonds between pipes and grounded structures or create insulating flanges for sectioning. Define the properties of the railway systems such as substations, resistance-to-earth of tracks, etc.

Solvers

Very quick and robust, calculating all relevant CP parameters

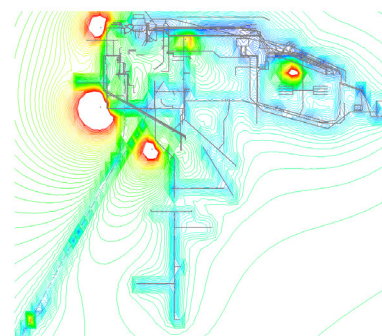
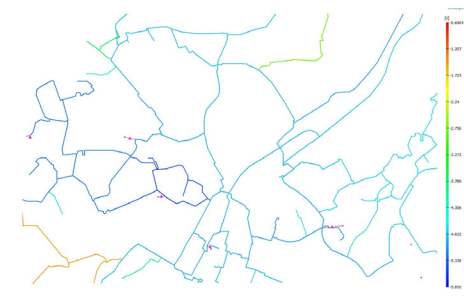
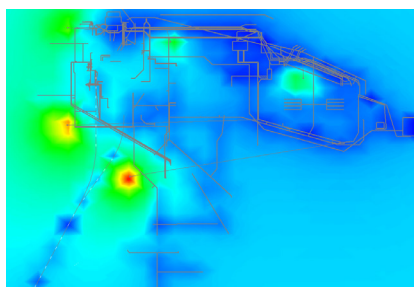
such as ON/ OFF/IR-free pipe-to-soil potentials, current densities, line current, ground potential rise, rectifier voltage etc.

Post-processing

Graphical representation of input data and simulation results on pipeline networks in color plots and graphs. Export of geometry, properties and results to Google Earth, SVG (Scalable Vector Graphics) of complete project (pipelines, rail tracks, anode beds, connections, ...). Generate simulation results in tabulated format.

“Elsyca Catpro is the easiest-to-use modeling and simulation software for the design and maintenance of cathodic protection systems of buried pipelines. Moreover, the prompt and professional support of Elsyca has made this an extremely satisfying solution.”





A complete set of functionalities:

- Full 3D model of pipeline and CP system
- Calculates ON/OFF /IR-free pipe-to-soil potentials, radial current density, axial current, voltage attenuation, soil potential, rail potentials, rail axial currents, current and voltage drop of drains and bonds
- Supports multiple CP systems (imposed current, potential or sacrificial)
- Database with standard pipe grades
- Advanced model for the coating quality taking into account the local soil resistivity and holiday size
- Modeling of electrical properties using current and voltage supplies, (unidirectional) current drains, resistive bonds, insulation joints, ...
- Stray current influences from 3rd party pipeline CP systems
- Stray current influences from HVDC power transmission lines
- Stray current influences from DC traction systems such as trams or above/underground trains
- Multiple soil layer analysis
- Visualization of radial current densities and axial currents along the pipes
- Import from file of existing coordinate databases
- Metric (SI) and Imperial unit systems
- Import from file of soil resistivity along the developed length of a pipeline
- Import from file of experimental pipeto-soil potentials for comparison with calculations

“Elsyca CatPro has been a vital tool for us in maintaining the competitive power of our corrosion control group. It saves us huge efforts by supplying immediate modeling capability which allows us to validate our CP system maintenance plan without expensive trial-and-error. Elsyca CatPro is also extremely helpful in understanding complex interference situations which cannot be simulated by other methods.

Struggling with CP field issues? Buried under tons of survey data? Dealing with DC interferences?

Elsyca CatPro gives you the answers!

