

# Elsyca CatPro

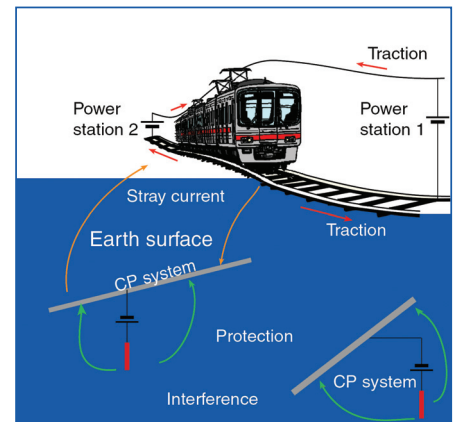
**Easy-to-use simulation software for the optimisation of cathodic protection systems for large networks of buried pipelines including stray currents.**

Corrosion of metallic structures is often caused by stray currents. The origin and impact of these stray currents is most of the time hard to predict unless you use the unique Elsyca CatPro simulation software.

The Elsyca CatPro software has been designed for the optimization of cathodic protection systems of large networks of buried pipelines taking into account the following effects:

- Cathodic, anodic, combined and induced interferences
- DC stray current interference from trains, trams, Rapid Transit Systems and HVDC interference from power transmission lines
- Interferences from 3rd party CP-systems or neighbouring pipeline systems

By applying the Elsyca CatPro software tool, the CP engineer can easily calculate different pipeline CP set-ups under various conditions (soil resistivity, coating quality, pipeline dimensions, rectifier output, ...) in order to custom-fit the system to his protection requirements. Consequently, the number of on-site interventions can be reduced significantly.



## Elsyca Catpro has already proven its benefits several times:

"Elsyca Catpro is the easiest-to-use modelling and simulation software for the design and maintenance of cathodic protection systems of buried pipelines.

Moreover, the prompt and professional support of Elsyca completes this solution."  
**(Mr. Hyun-Goo Lee, KERI - South Korea)**

"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 modelling capability enabling 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. We have recommended Elsyca CatPro to several other companies, sharing the same interest in efficiently managing their CP systems."

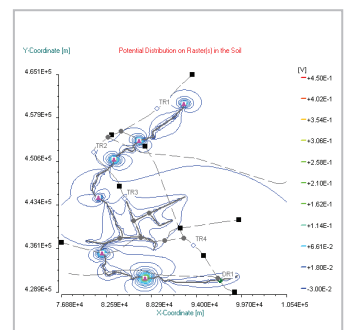
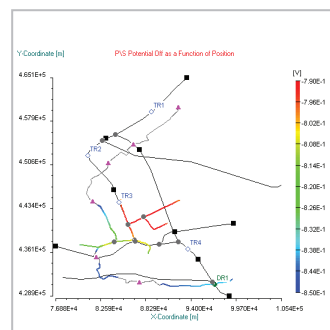
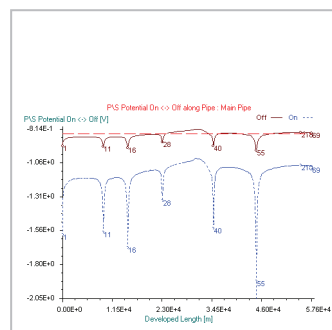
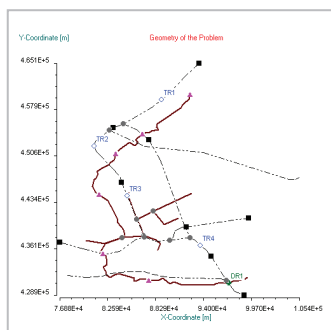
**(Dr. Kim YoungGeun, Corrosion Control Team/PM, Korea Gas Corporation)**

## Application fields

- Conceptual design of new CP systems
- Evaluation and optimization of existing CP systems
- Evaluation of on-site measurements
- Develop rules of good practice
- Training of personnel

## Advantages

- Increased confidence in design
- Optimization of performances
- Increased reliability
- Reduced maintenance
- Reduced exploitation costs



### Elsyca CatPro Key Features:

- Full 3D model for pipe structures, using “pipe elements” to reduce computation time
- Multiple pipeline networks
- Multiple CP-systems (imposed current, potential or sacrificial)
- Multiple DC-traction systems
- Database with standard pipes
- Advanced model for the coating quality (taking into account the local soil resistivity)
- Any pipe section can be used in combination with any coating quality
- Modelling of electrical networks using current and voltage supplies, (uni-directional) current drains, resistive bonds, insulation joints, ...
- Stray current influences from 3rd party systems
- Stray current influences from DC-traction systems such as trams, above/underground trains and Rapid Transit Systems
- Stray current influences from HVDC power transmission lines
- Visualization of on/off pipe-to-soil potentials, pipeline attenuation and soil potential distributions
- Visualization of radial current densities and axial currents along the pipes
- Multi-layer analysis
- Import from file of existing coordinate databases
- Import from file of soil resistivity along the developed length of a pipeline
- Import from file of experimental pipe-to-soil potentials for comparison with calculations
- Metric (kms) and English (miles) system

### Hardware and platform requirements for Elsyca CatPro

- Operating system: Windows2000, WindowsXP
- Internal memory: minimum 512MB RAM
- Processor: minimum 1GHz
- Hard disk space required: 6MB

### Input parameters for Elsyca CatPro

- Position of pipelines (including 3rd party), anodes and tracks
- Position and specification of rectifiers, resistive bonds, insulating joints, current drains, power stations, trains, ...
- Coating quality of pipelines
- Soil resistivities

### Calculated output of Elsyca CatPro

- On/off pipe-to-soil potentials
- Radial current density
- Axial current
- Voltage attenuation
- Soil potential
- Protected and non-protected pipeline sections
- Additional output of all data in Excel format