

# FORCE Technology Cathodic Protection Management - Improves your structural integrity



FORCE Technology's CP management services covers field work as well as in house analysis and online reporting

FORCE Technology's CP Management takes care of your cathodic protection integrity by utilising extensive experience and knowledge in CP design and modelling, as well as inspection planning, inspection, inspection management, data management and reporting. FORCE Technology utilises monitoring and inspection data combined with advanced Boundary Element Method (BEM) and Finite Difference Method (FDM) modelling to predict future CP development, as an important input to inspection planning and status evaluations.



This Site  

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Site Actions

## Site Overview

### Announcements

8/31/2009 8:56 AM

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### CP STATUS ONLINE

#### Sites



KPI	Actions
ATTENTION (0)	Not Started (0)
ATTENTION (0)	In Progress (1)
OK (0)	Completed (0)
TBD (0)	Deferred (0)
	Waiting on someone else (0)



KPI	Actions
ATTENTION (0)	Not Started (1)
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OK (0)	Completed (0)
TBD (0)	Deferred (0)
	Waiting on someone else (0)

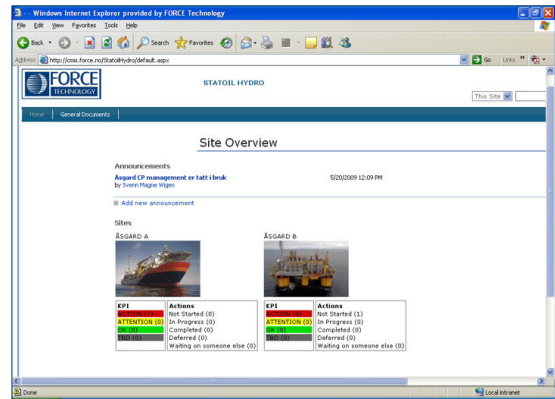
## Data Management - Reporting and presentations

### CMIS - Cathodic Protection Management Information System

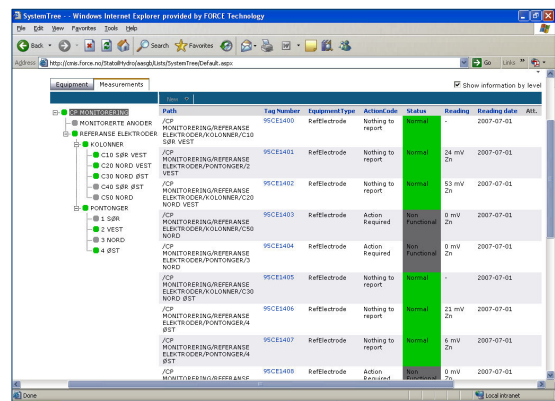
FORCE Technology works closely with site and offshore crew to assess monitoring data. Monitoring and inspection data is stored, trended and analyzed by a web based database ([www.cmis.force.no](http://www.cmis.force.no)) where all users access through a user name and password protected login. The data base communicates with dedicated users through e-mail notifications upon uploads or in case of any assigned actions. All data is systemised and colour coded for easy status review.

#### CMIS features:

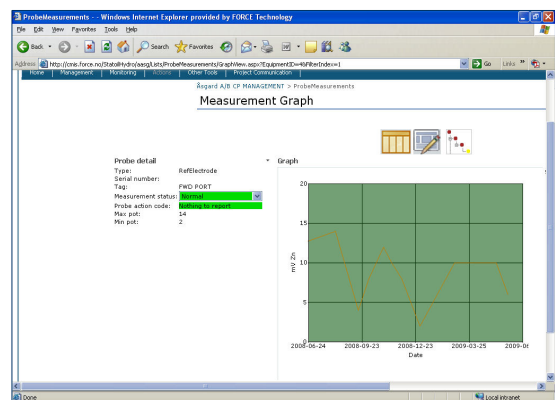
- Management drop-down menu for storage and sharing of documentation, KPI and Service Orders.
- Monitoring drop-down menu for accessing all monitoring and inspection data.
- Action drop-down menu to create and assign actions for the CP systems.
- E-mail notification from the CMIS data base when changes, such as data upload or document revisions, have been carried out, or when actions have been assigned.
- The CMIS allows one client to access all facilities in a CP management program by the same web user interface.
- Login to database by username and password.



FORCE Technology's online CMIS user interface. Clients' facilities can be accessed by clicking on icons. Key Performance Indicators (KPIs) and actions are linked to the welcome page.



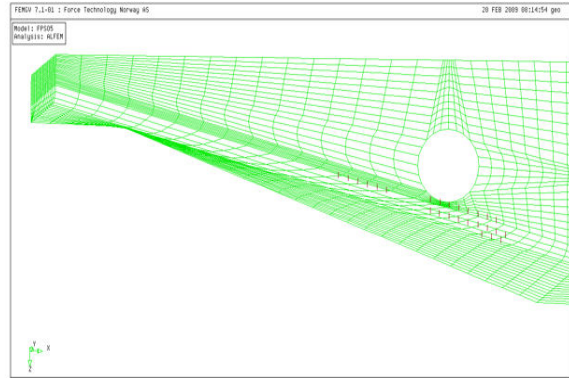
CP system tree view allows accessing all tag numbers. Easy overview of status of any tag or structural item.



CP potential and current data is trended in the data base. Easy access to all data or a selected period. The defined safe operational window will be highlighted.

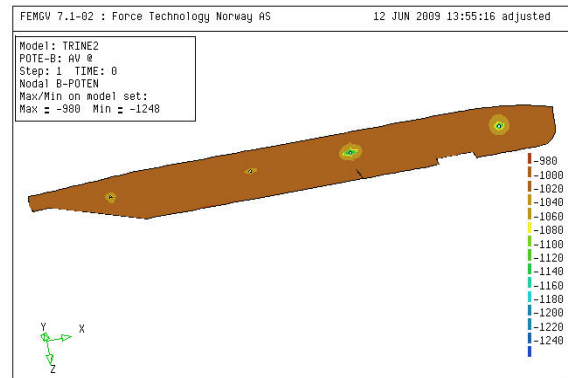
## Inspection Planning and Operational Support

In addition to inspection planning and on-site inspection, FORCE Technology's CP Management services cover operational support and troubleshooting of Impressed Current Cathodic Protection (ICCP) systems on e.g. FPSOs and semi submersibles. Our 3D BEM modelling software SeaCorr™ is a valuable tool for assessing problem areas for CP and to optimise ICCP settings on structures where ICCP and galvanic anodes are used at the same structure. SeaCorr modelling benefits inspection planning and is an important tool in order to highlight areas and structures requiring attention in terms of inspection.

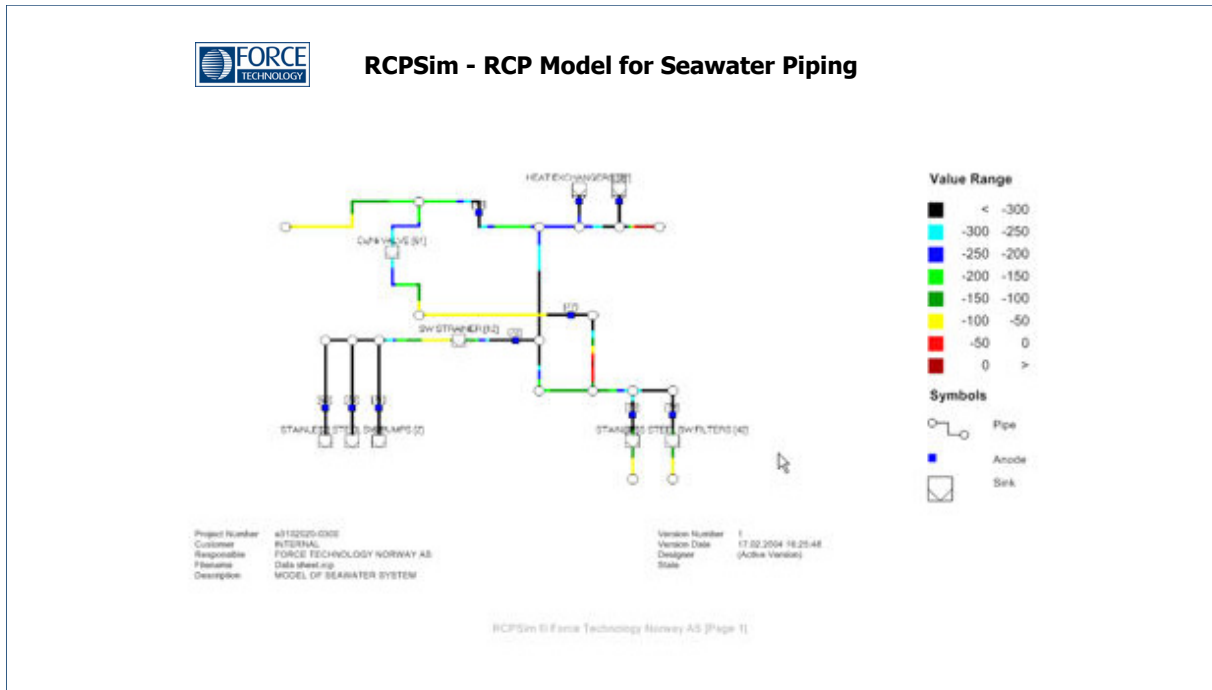


SeaCorr model showing the geometry of the aft section of an FPSO with galvanic anodes and ICCP anode shielding.

For seawater carrying pipelines or piping, FORCE Technology offers design and management of internal Impressed Current Cathodic Protection (ICCP) systems, and design and delivery of Resistor controlled Cathodic Protection (RCP™) systems. Advanced FDM modelling allows design and operational modelling of pipelines and piping as input to determine critical inspection areas.



Calculated potential distribution on an FPSO hull with optimised ICCP current relieving unintended current drain from galvanic anodes.



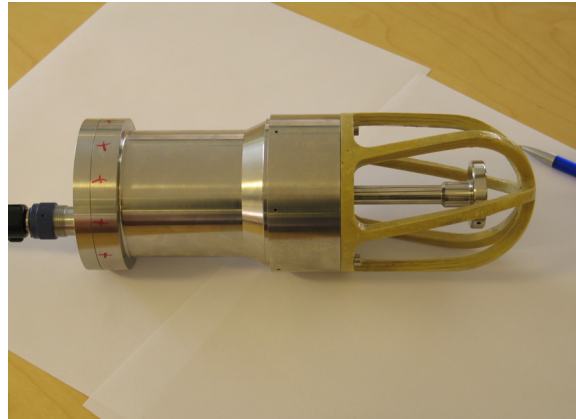
FORCE Technology's FDM software allows full scale modelling of complex networks of seawater carrying pipelines and piping into one integrated model.

## Inspection and Inspection Equipment

FORCE Technology offers CP inspection of offshore and onshore structures, either as inspectors or as 3rd party supervisors. Data collection and management is an important factor for revision and optimization of the CP Management program.

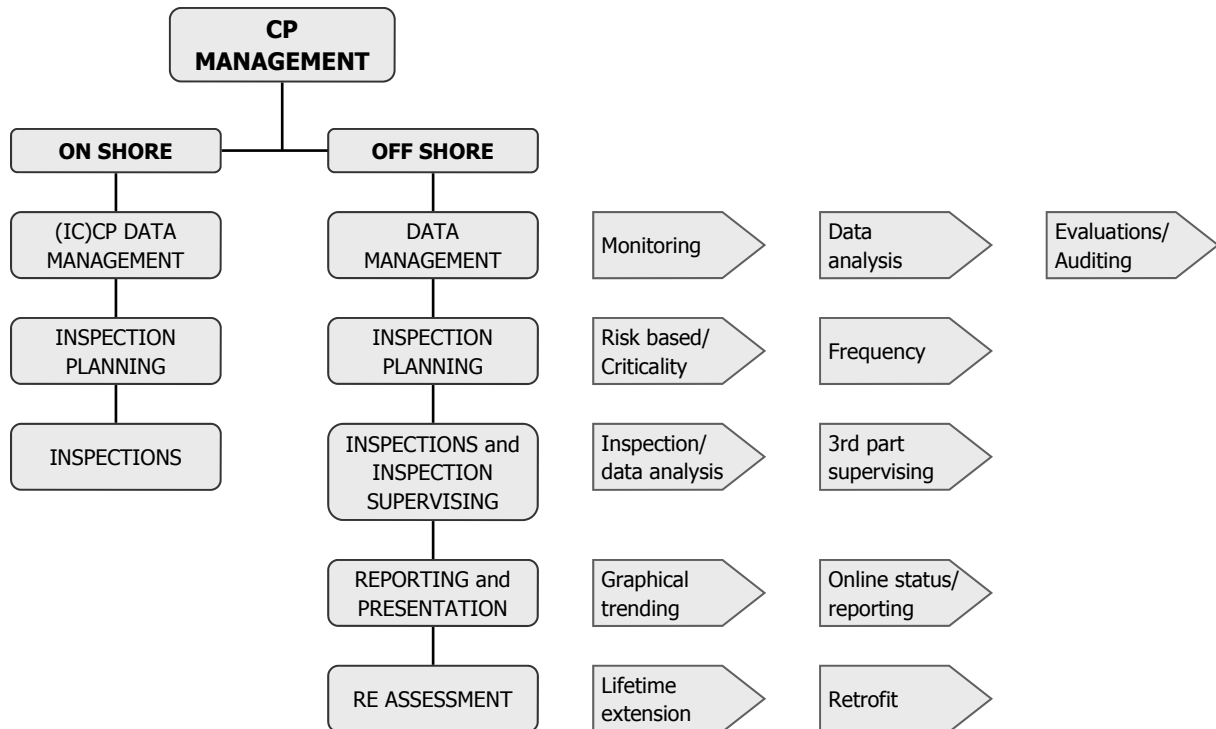


DC clamps for CP current readings in pipes, mooring chains etc Permanent and ROV operated.



The T-sensor - Rotating high sensitivity CP gradient reader for subsea inspection of structures and pipelines.

## CP Management Working Process



FORCE Technology offers a wide range of services within Cathodic Protection services, forming CP Management structure and philosophy.



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