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Solution
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Software

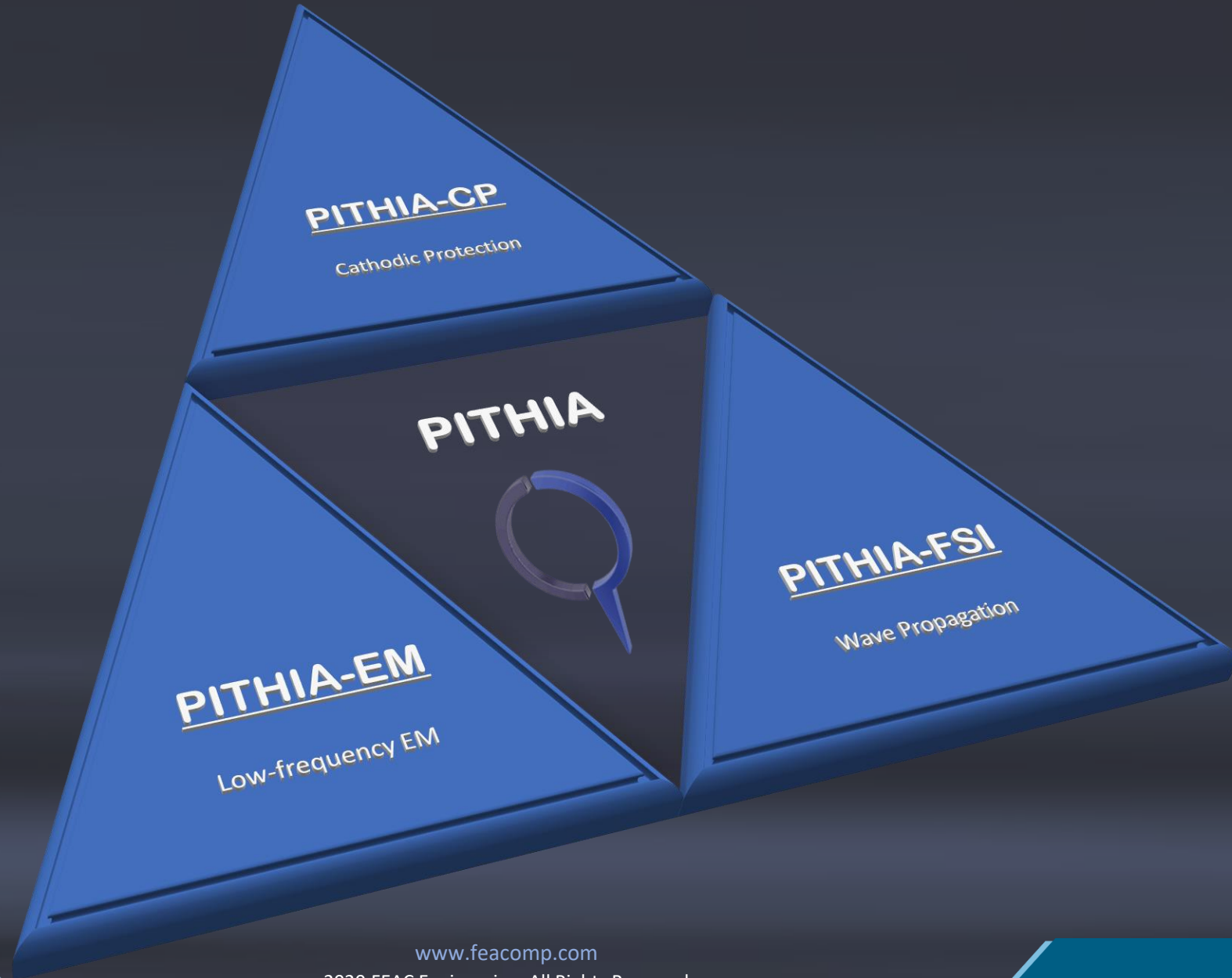
SIEMENS



PITHIA

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The phenomenon

Corrosion

... is defined as 'an irreversible interfacial reaction of a material (metal, ceramic, polymer) with its environment which results in consumption of the material or in dissolution into the material of a component of the environment' (IUPAC,2012).

From: [Understanding Biocorrosion, 2014](#)



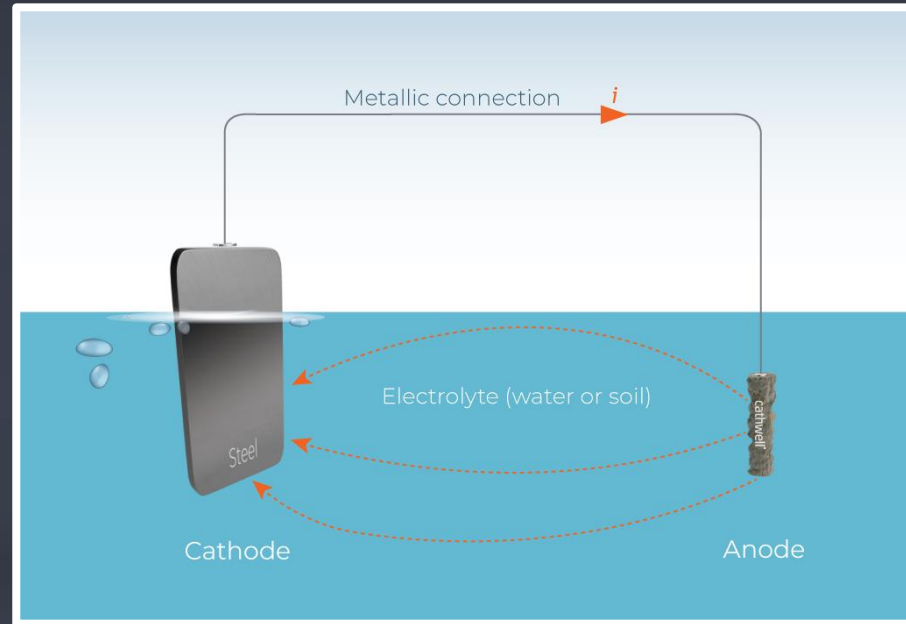
Why BEM?

The Boundary Element Method is ideal to simulate Cathodic Protection models, as it can handle semi-infinite or infinite spaces while providing accuracy in the computed results -

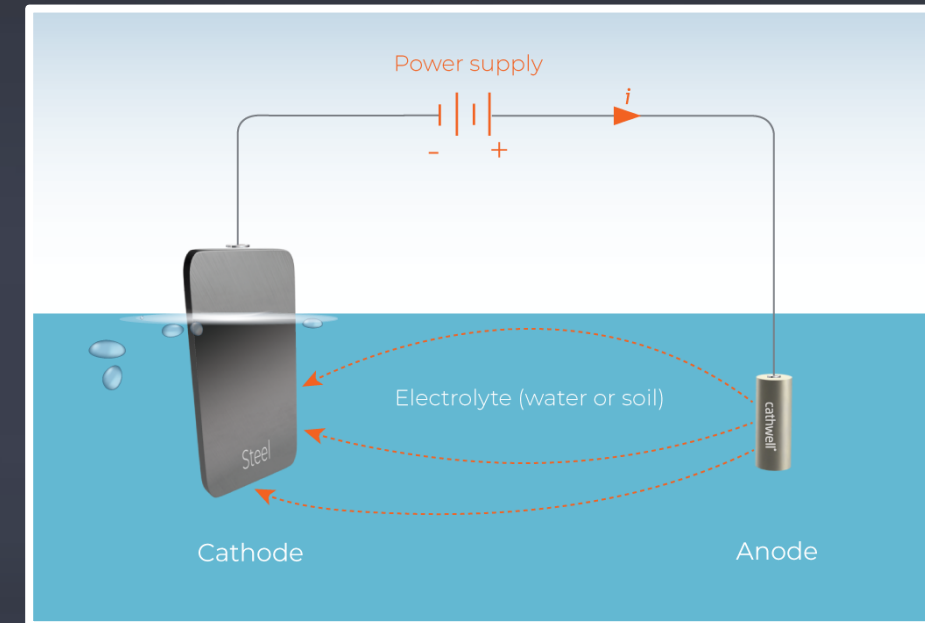


Cathodic Protection Systems

SACP



ICCP



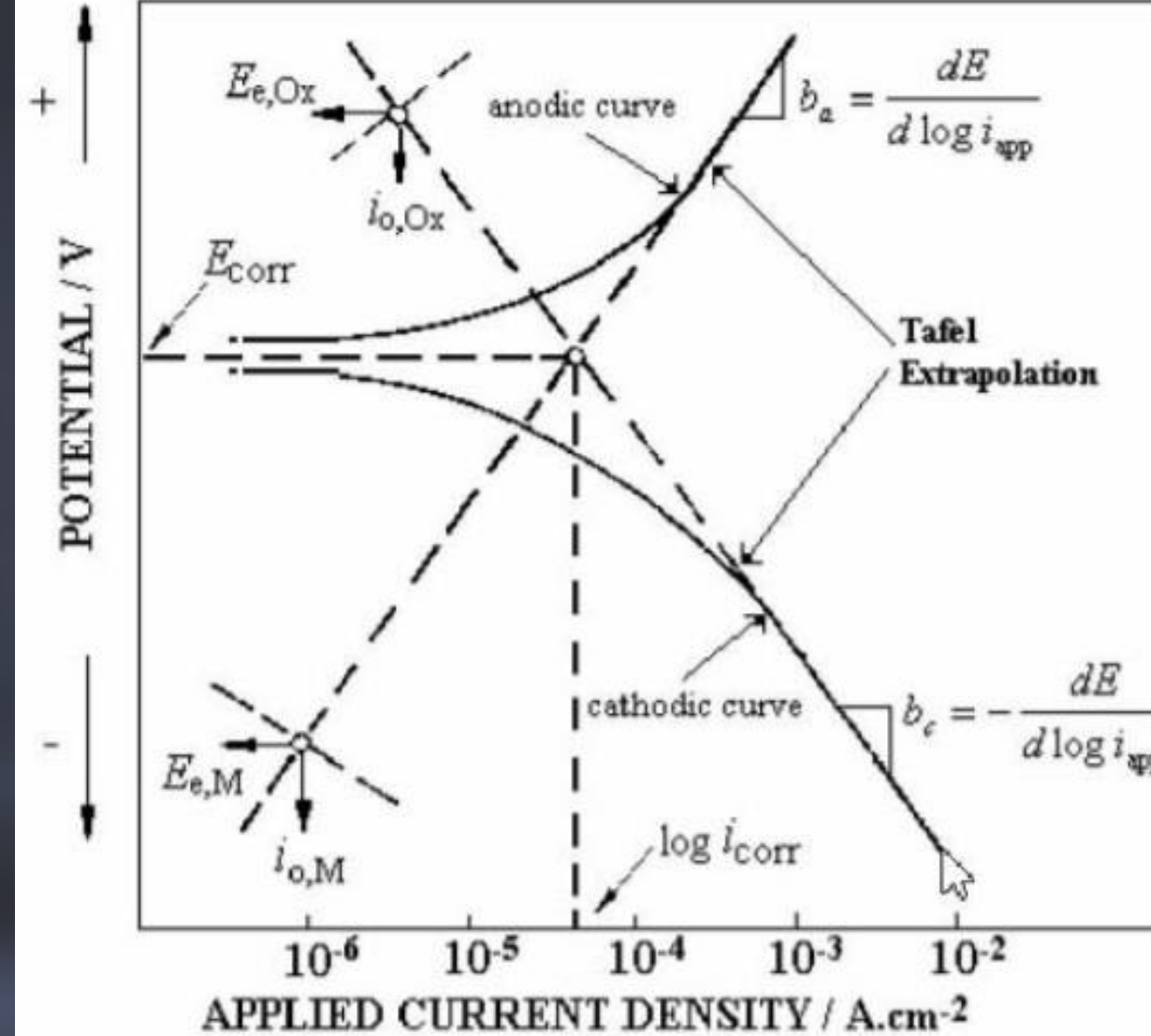
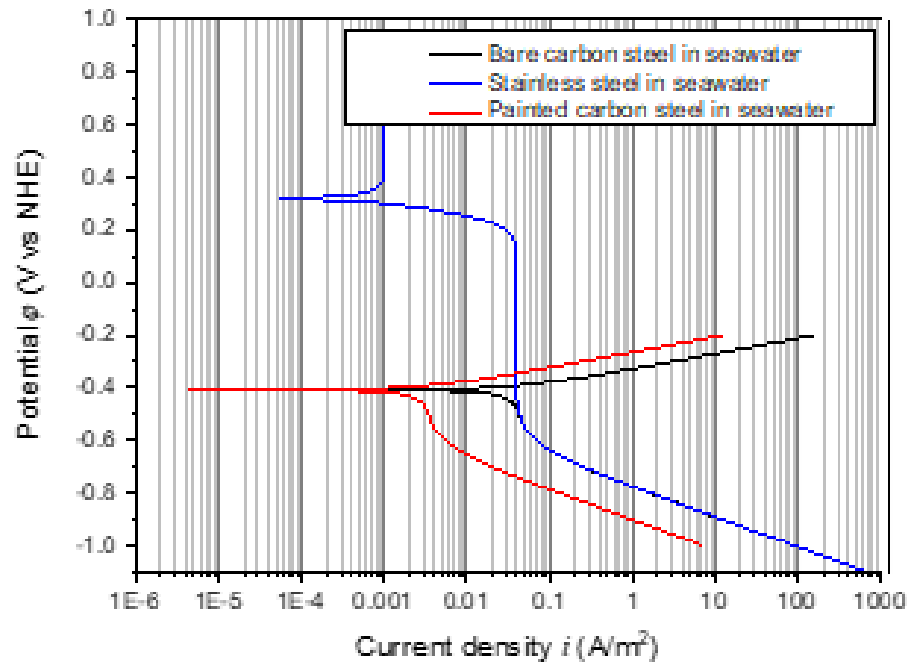
When is cathodic protection obtained?

Cathodic protection current flow onto any metal will shift its normal potential in the negative direction. Full cathodic protection of steel is obtained by a potential at a certain level defined by standards.

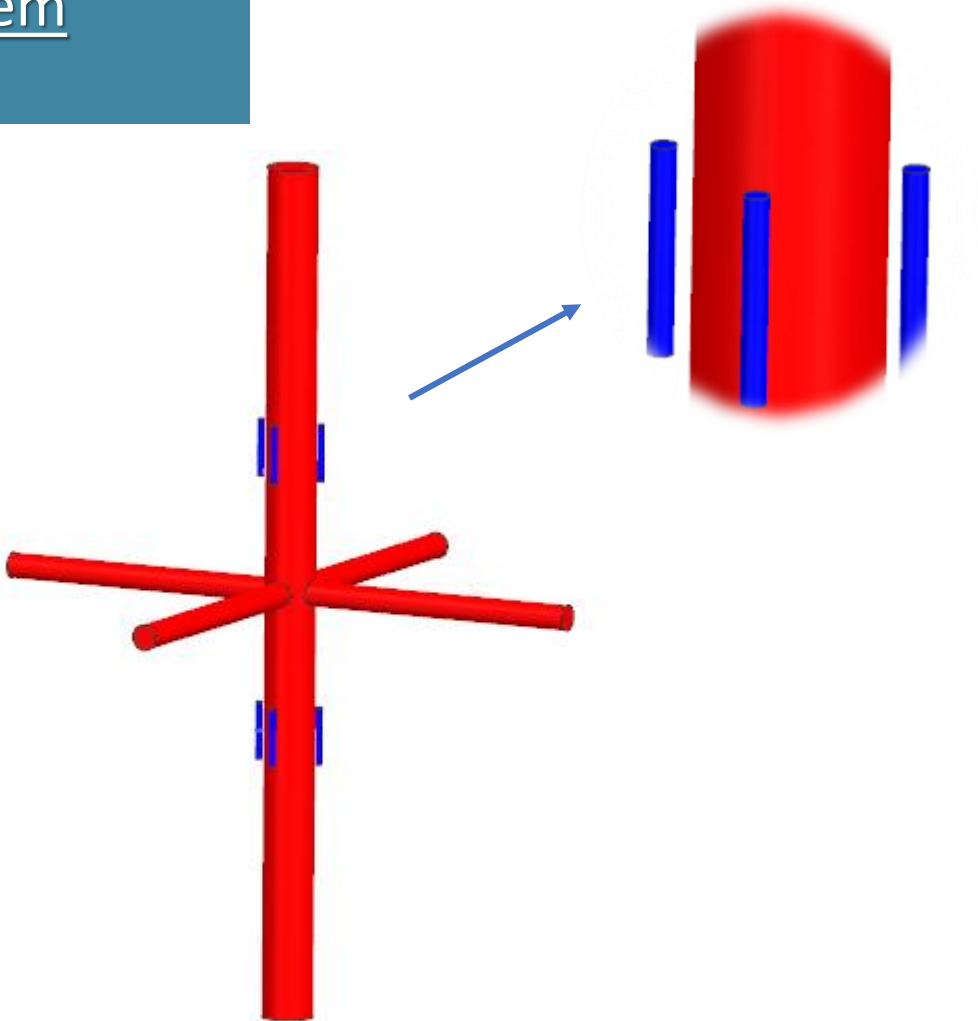




Characteristic Polarization Curve

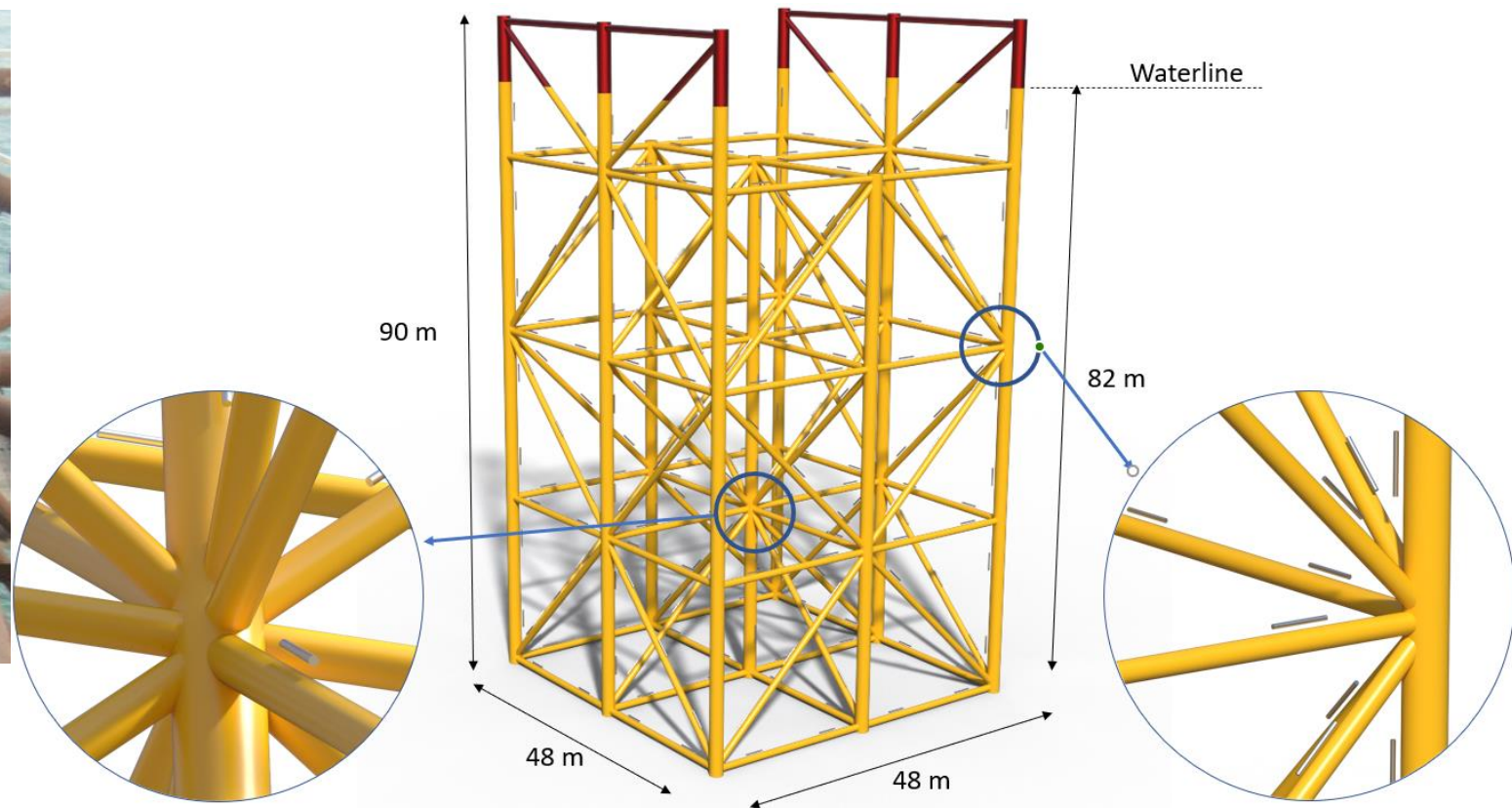


Tutorial: SACP System



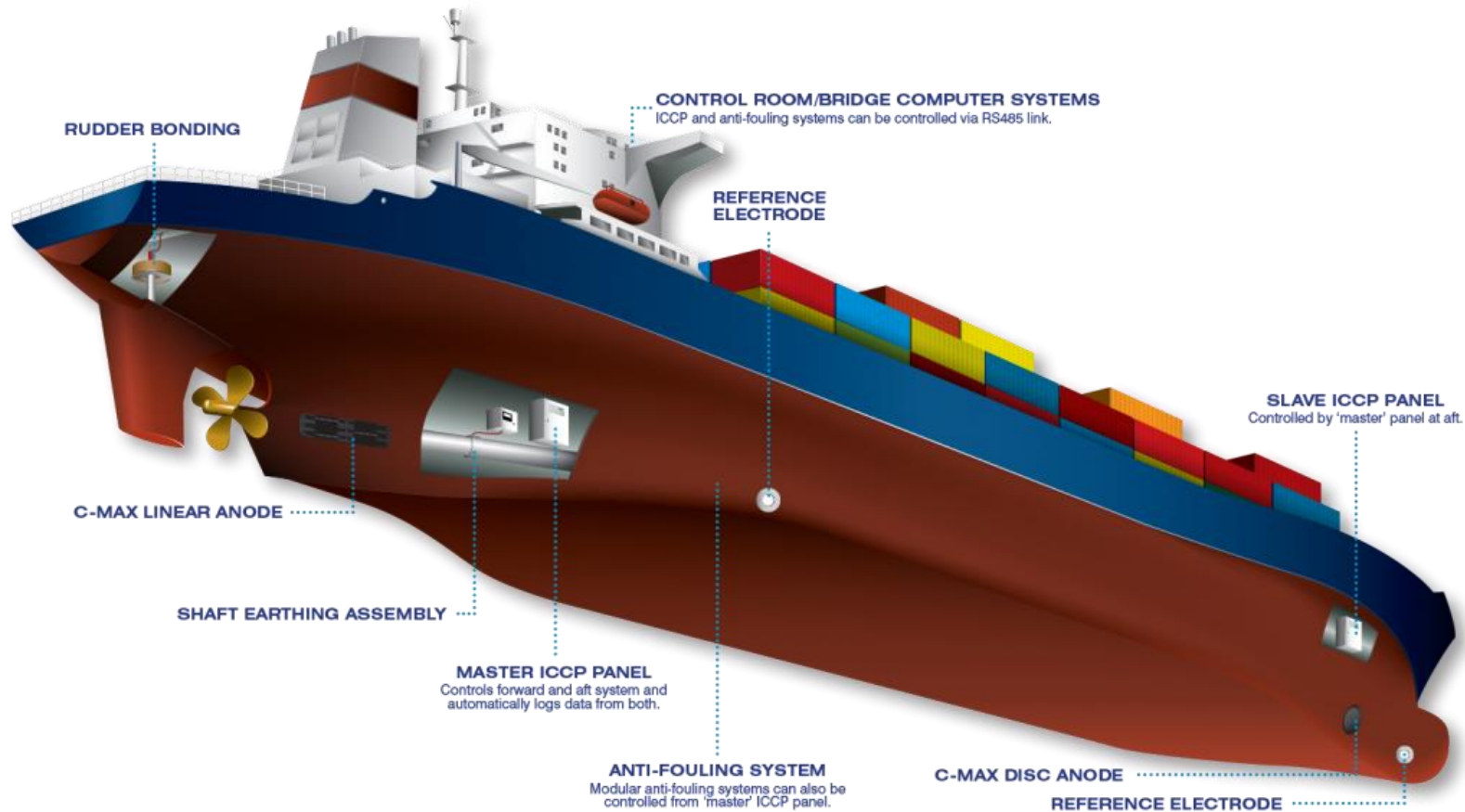
Dimensions	
I Large Pipe (cathode):	30m (30000mm)
D Large Pipe (cathode):	1.8m (1800mm)
I Crossed Pipes (cathode):	10m (10000mm)
D Crossed Pipes (cathode):	0.9m (900mm)
L Anodes:	2m (2000m)
D Anodes:	0.25m (250mm)

Example-1: Oil & Gas Platform





Example-2: LPG Vessel





Thank you for your attention!

