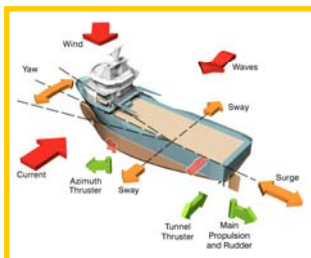




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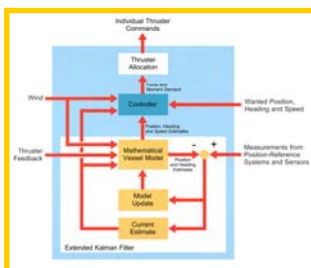
# Basic Dynamic Positioning Principles



## Forces & Motions



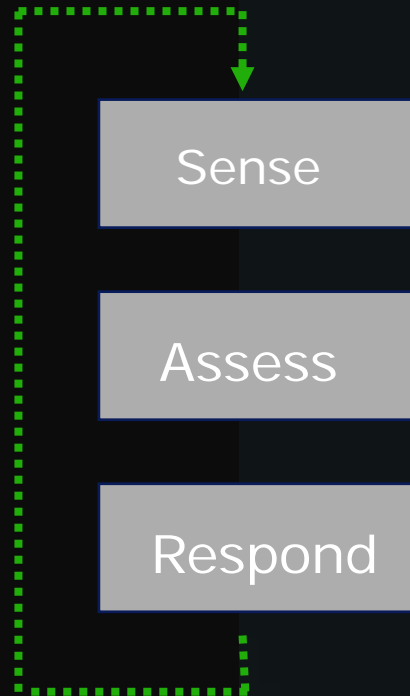
## Measurements



## DP Control



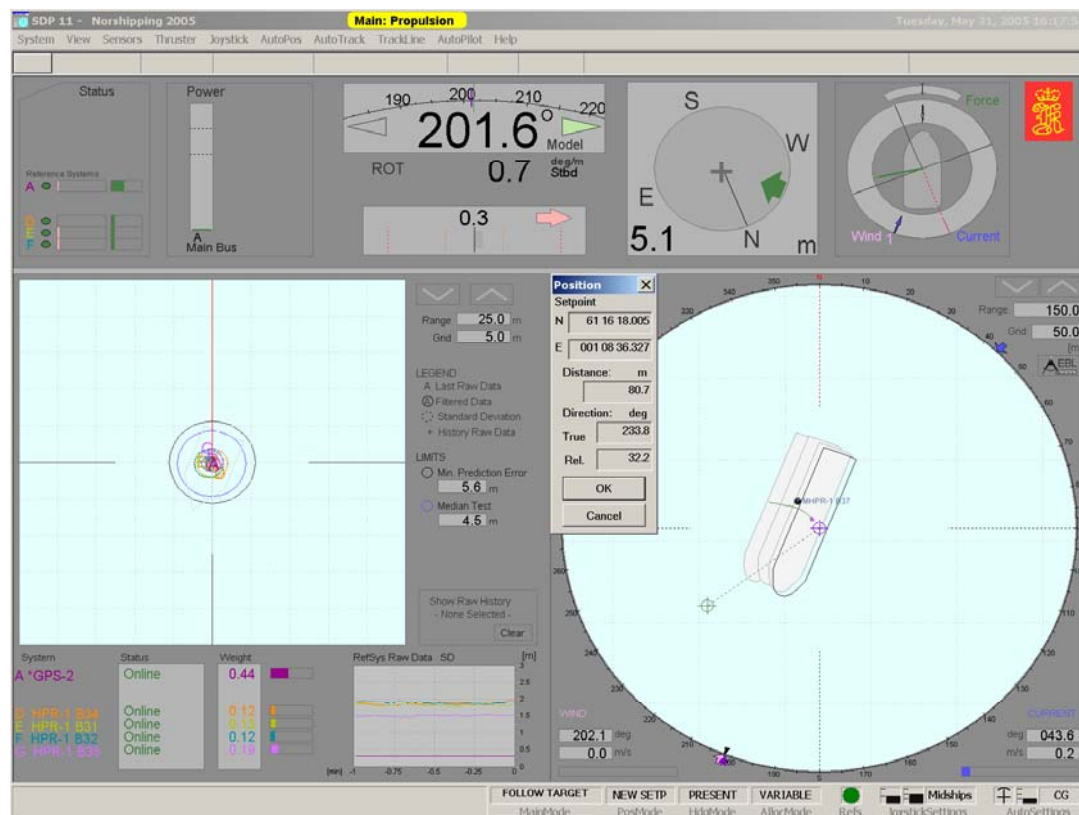
# Dynamic Positioning



# Dynamic Positioning



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Computerized control of position and heading

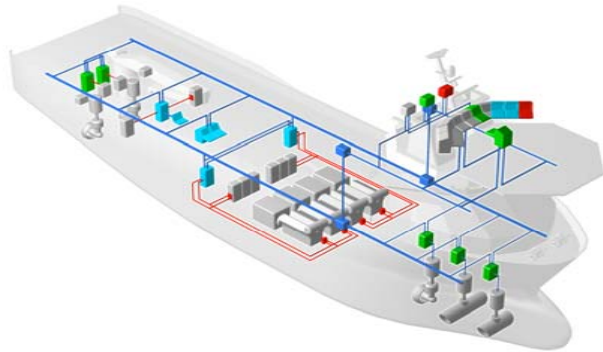
A tool for efficient and safe offshore operation



# Dynamic Positioning System Components



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## DP Control system

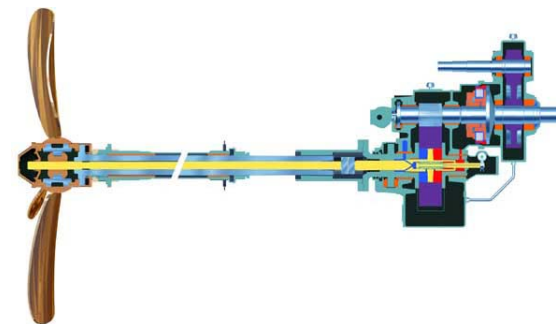
- Automatic control system
- Independent joystick system
- Sensors
- Position Reference Systems

## Electrical Power Plant

- Power generation
- Power distribution

## Propulsion and Thruster System

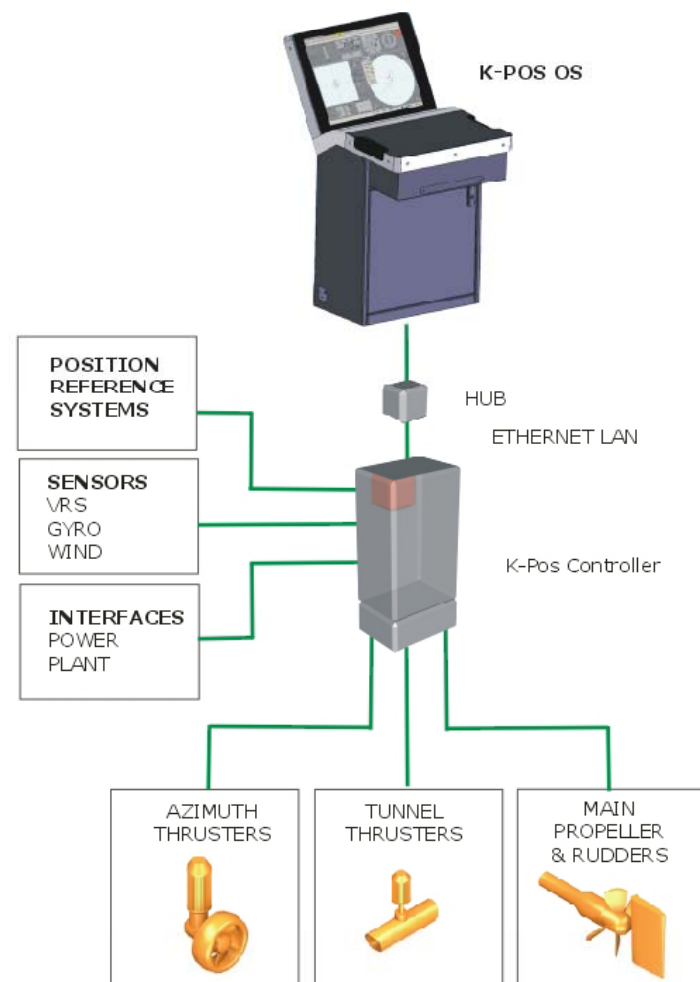
- Engines / Drives
- Propellers, Thrusters, Rudders



# DP Control System Configuration



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# Basic Forces and Motion

## Degrees of freedom

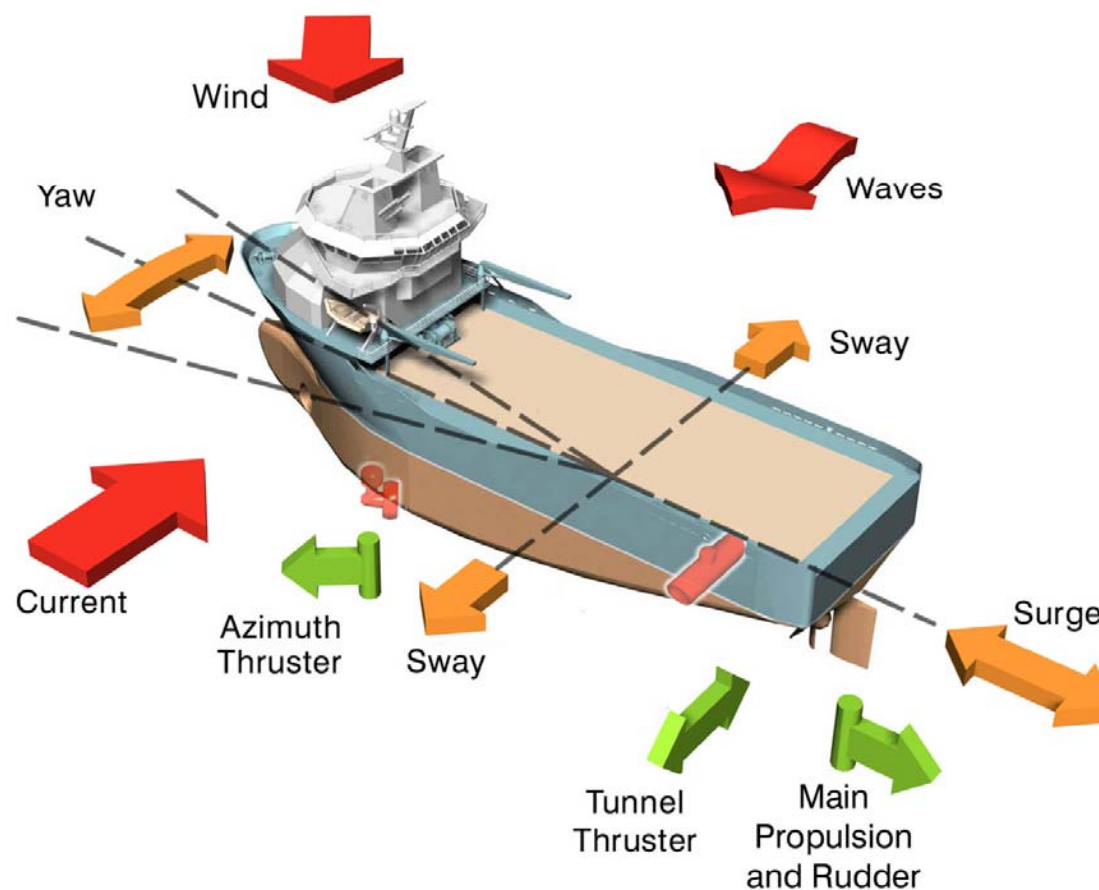
- Surge
- Sway
- Yaw

## Environmental Forces

- Wind
- Waves
- Current

## Thruster Forces

- Tunnel thrusters
- Azimuth Thrusters
- Propulsion/ Rudders





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# Position Reference Systems and Sensors

## Position Reference Systems

- Satellite Systems
- Laser Systems
- Radar Systems
- Radio Systems
- Acoustic Systems
- Taut Wire

## Attitude Sensors

- Gyro Compass
- Motion Reference Sensor (MRU)



Input to the  
Dynamic Positioning  
System

