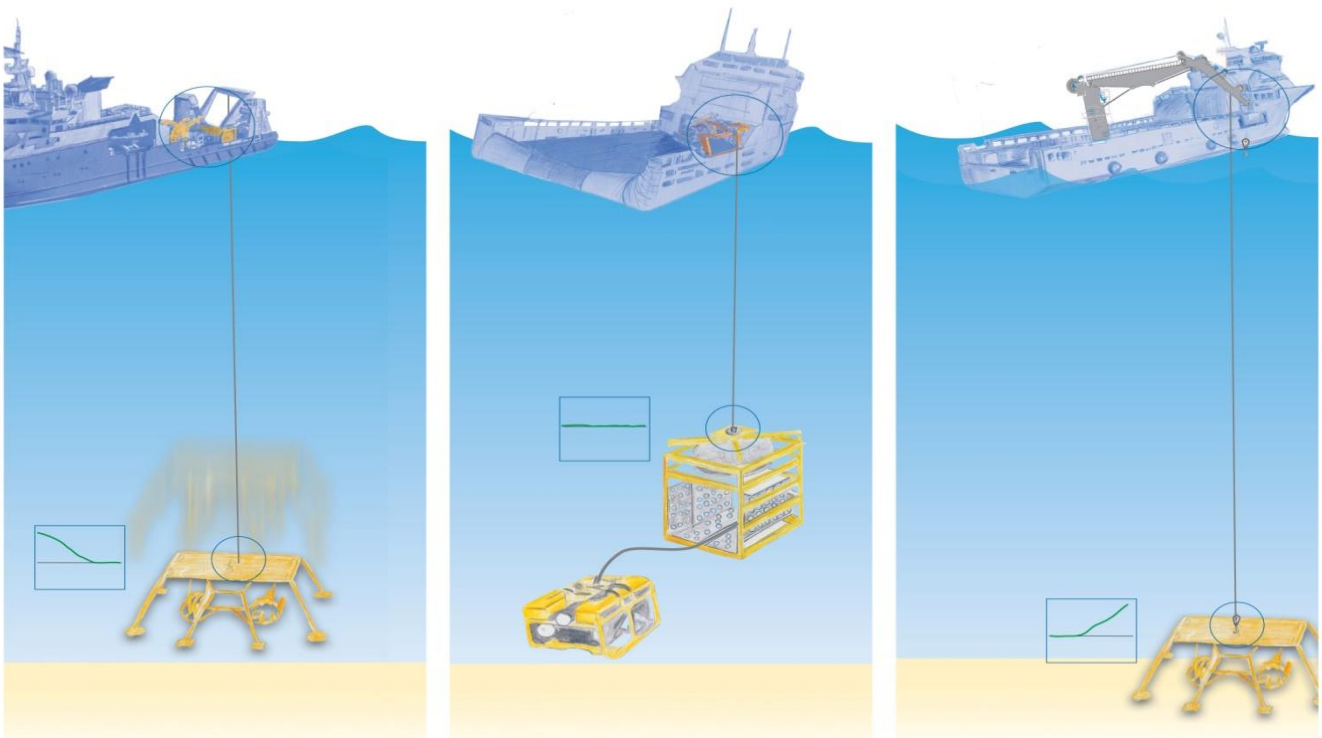


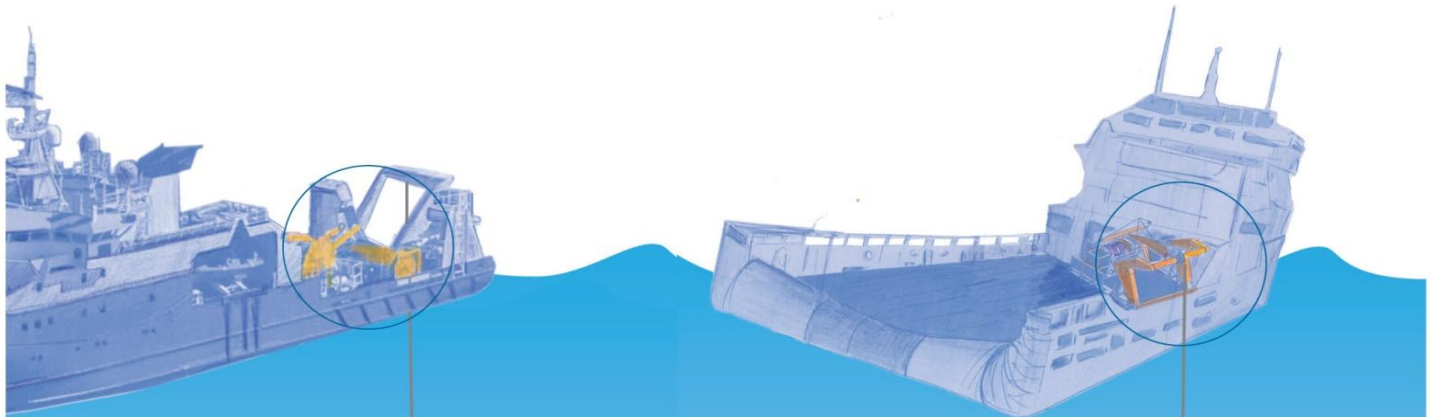
Adaptive Active Heave Compensation for all Winches



Increase operation time of ROV and subsea lifting operations by Scantrol AHC

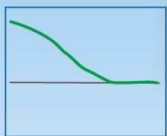
SCANTROL AHC – SAFE AND EFFICIENT

Scantrol AHC is an Active Heave Compensation control system for winches and cranes used for subsea operations. The system includes a MRU (motion reference unit) measuring vessel heave, pitch and roll motion. Scantrol AHC is controlling the winch to eliminate vessel motion being transferred to the load. The winch operator has precise control over the load, also when operating in rough sea conditions. Scantrol AHC adapts to varying load and operating conditions to maintain safe and efficient compensation without overloading the winches. AHC will increase operational time window and minimize weather related downtime.



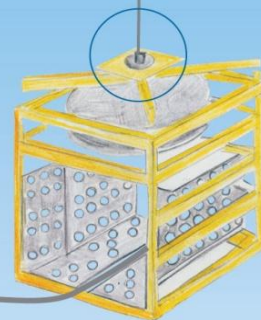
Landing and Pickup from Seabed

Precise and safe handling of subsea equipment during landing, pickup and positioning. Scantrol AHC controls the winch to compensate for vessel motion and eliminate vessel motion being transferred to the load. The winch operator has precise control, and can heave, lower, or position the load without influence from the ships motion.



ROV Handling

Scantrol AHC keeps the TMS at a fixed position. Docking of the ROV against the TMS can be done safe and controlled without the vessel motion on the waves compromising the TMS position. The AHC function will give improved and accurate control also when deploying and retrieving.



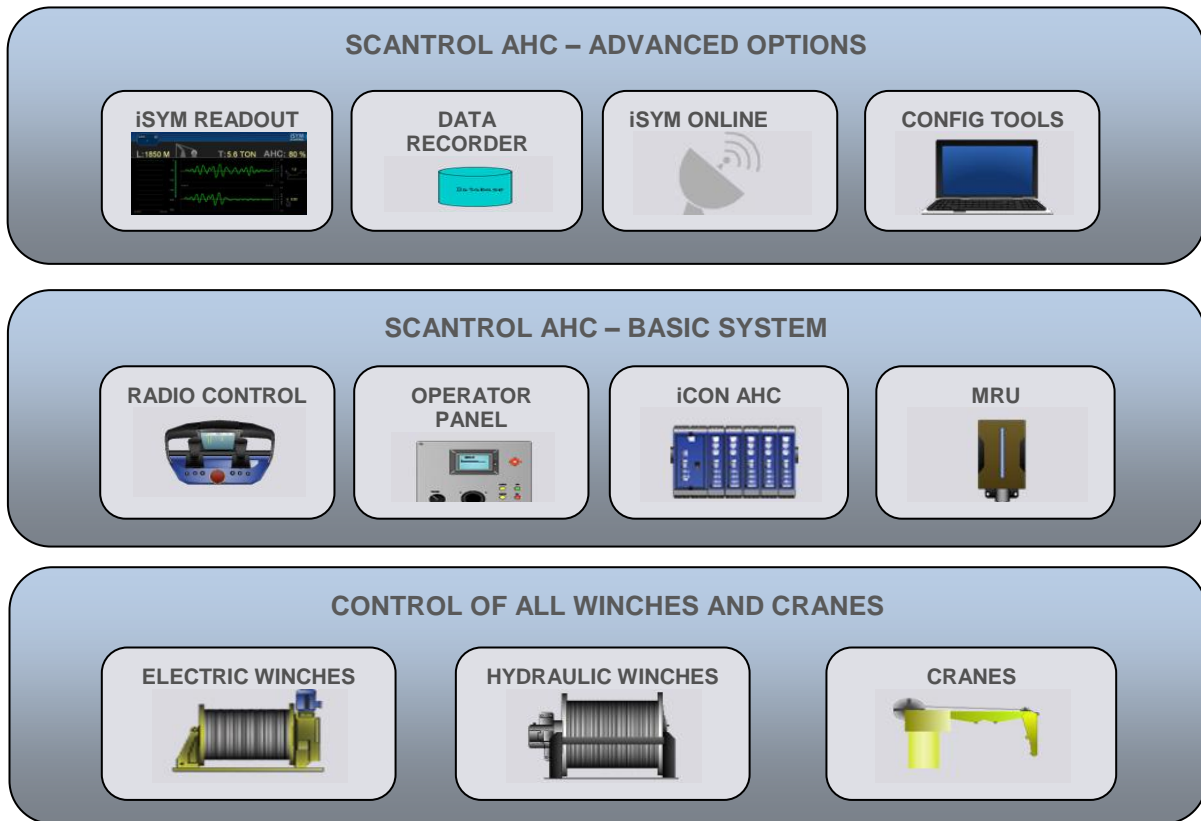
AHC for existing winches

Many existing winches have speed and torque characteristics that make them suitable for AHC. By using the Scantrol AHC Analyzer it is possible to predict AHC performance with different loads, and varying vessel motion. In many winch applications only a fraction of the winch design load is being used during normal operation, and the spare torque can be used for AHC. This is the case with many ROV handling winches that are designed with a lot of redundancy power. In many cases it is possible to fit AHC to existing winches with little or no modifications to the winch.

SCANTROL AHC – FLEXIBLE SOLUTIONS

Scantrol AHC is designed to perform safe and reliable Active Heave Compensation with any winch or crane used for subsea operations. The system can control both electric and hydraulic winches, and will optimize AHC by continuous winch performance analysis. The system is flexible and can be delivered in different configurations, ranging from a control unit with a simple operator panel or radio control, to an advanced iSYM system with multiple displays and data recorders. The figure below shows what is included in the basic system, and the advanced options that can be added.

SYSTEM CONFIGURATION



BASIC SYSTEM

iCON AHC controller.

This is a high end real time controller (RTC) with hardware and software dedicated for high speed AHC control, and interface to both electric and hydraulic winches.

MRU

Sensor for measuring vessel movement. Pitch, roll, and heave are measured with very high accuracy.

Operators Panel

Panel with joysticks and touch screen. Layout and functionality can be adapted to operational requirements.

Radio Control

Tailored for safe and reliable winch operation

ADVANCED OPTIONS

iSYM

Crane and Winch Monitoring and Control System.

Data Recorder.

Records winch and vessel data during operation.

iSYM Online.

Remote access for monitoring and maintenance

Config Tools

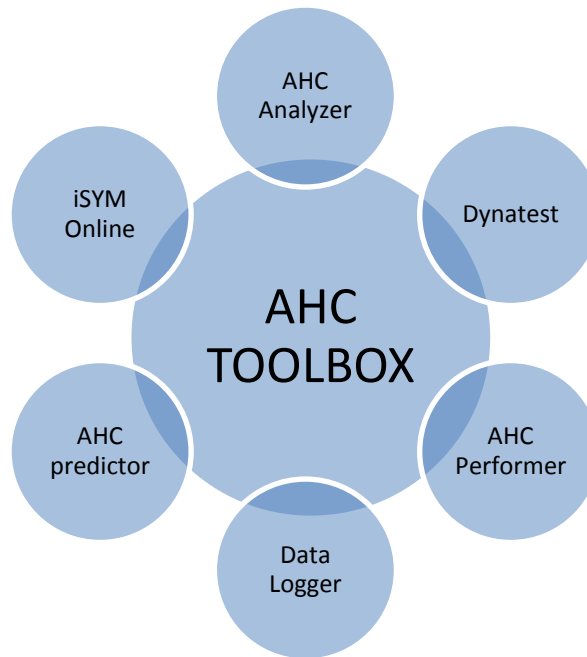
WEB interface for setup and test

Winches and Cranes

All winches and cranes with characteristics suitable for AHC can be controlled by iCON

SCANTROL AHC - ANALYZE - DESIGN - TEST - OPERATE

Scantrol has developed an AHC toolbox that makes it possible to specify AHC requirements, and to find the optimum winch design to match these requirements. It helps the winch designer to identify critical factors and to minimize power consumption. The toolbox includes software for data logging, and for monitoring of AHC performance.



AHC - Analyzer

Tool for designing the optimum winch to meet required AHC performance, or to determine AHC performance with an existing winch. Analysis can be based on simulated vessel movement or vessel motion recorded by Scantrol AHC

AHC Predictor

Used by the operator to predict AHC performance before starting lifting operation. Prediction is based on present vessel movement and present or planned load.

iSYM Online

Connects to ships LAN or via satellite for remote monitoring, software upgrades, data download, and data exchange with other systems.

Dynatest

Test tool for running winch in workshop to record dynamic winch characteristics, and verify AHC characteristics. The test can run on simulated vessel motion or by vessel motion recordings from Scantrol AHC

AHC Performer

Continuous monitoring of vessel motion and winch operation to make sure that optimum AHC is achieved without overloading the winch. The operator can see the percentage of winch capacity used for AHC.

Data Logger

Vessel motion and all winch data are logged continuously during operation

Scantrol is an independent supplier of winch control systems for marine and offshore applications, located in Bergen, Norway. Our control systems range from simple winch controls to the most advanced controls for AHT Vessels, Seismic Survey Vessels, Marine Research Vessels, Fishing Vessels, Semi Subs, and Barges. An extensive international network for service and support ensures reliable operation and a long lifetime of the systems we supply.