

Powerful, compact and low cost control solutions  
for the worldwide subsea oil and gas industry



 **Jupiter**<sup>TM</sup>  
SUBSEA CONTROL SYSTEMS



Zetechtics manufacture the Jupiter Subsea Control System for the Tooling Intervention Market. Formed in 1992 Zetechtics have become the market leaders in Subsea Control Systems for ROV Intervention Tooling with the Jupiter System and are now applying their technology to Well Intervention & Workover Systems.

There are over 200 Jupiter Systems in service worldwide, operating complex, hi-integrity systems such as flowline pull in tools and pipeline repair equipment.

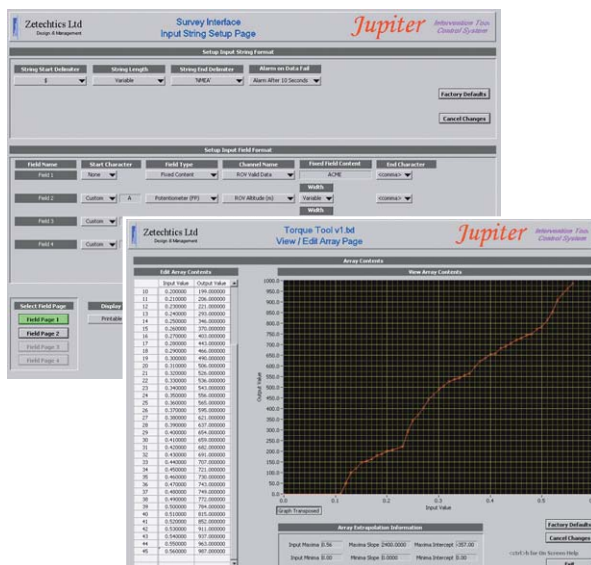
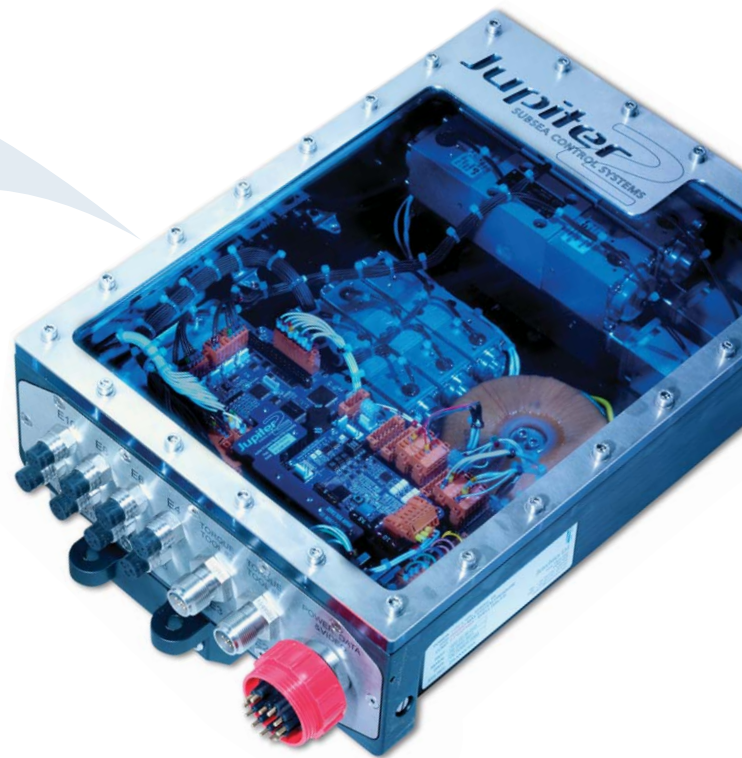
### Hardware

The concept behind Jupiter is standardization of hardware & software. Every Jupiter System in operation uses the same compact, low cost hardware core, which is designed specifically for Subsea Intervention rather than the commonly used modified COTS components housed in a large 1-atmosphere pressure vessel. This way we reduce complexity and avoid obsolescence problems.

Every Jupiter systems is designed and tested to operate in at least 3,000 meters of seawater.

### Software

The Jupiter Software is identical in every system ever supplied, using a small 'set-up file' to instruct the control system exactly what it is controlling, the calibration of sensors, how the tool should work, what interlocks it may have, how it wants the GUI arranging and how to datalog the operations & results.



The Jupiter software system has a variety of features and options that the client can choose from. All available options are included within the standard software package and are simply enabled on request. Thus a Jupiter system can be upgraded to add new facilities at any time. New options are continually being added and can be retrofitted to older systems if required.

### Set-up System

All Jupiter systems use the same software; no special customized version is required for a users application. The software is 'told' what to do and how to do it by a single set-up file. The user has free access to all aspects of the Jupiter software set-up and does not require the use of a software engineer to make alterations to the operation of the Jupiter system. The user can allocate individual passwords to any part of the Jupiter set-up system to prevent unauthorized alteration.

## Applications

Following is a brief resume of some of the existing applications of Jupiter Systems.

### Flowline Pullin & Connection

Jupiter systems have been used by Technip with its Flexconnect System and FMC for their three ROVCON Systems. Both systems have been successful and the FMC systems in particular are in continuous use.

### Pipeline Repair

Jupiter Systems are used by Saipem International Ltd in their successful Brutus Pipeline Repair System.

### Tool Deployment Units

Jupiter Systems have been used by Kvaerner for 5 TDU systems. Systems have also been purchased by Cooper Cameron, Saipem and Fugro Ltd.

### Heavy Lift Module

A Jupiter system was used by Kvaerner to control their HLM3 tool, which is used for exchanging control modules and chokes in deep water.

### Shallow Water Lift Line Running Tool

Jupiter System was used to control an SLRT by Cooper Cameron on the AGIP Bahr Essalam Field. This tool was supplied by improV Ltd.

### Torque Tool Control

Zetechtics are the market leaders worldwide in Torque Tool Control with 200 systems currently operating in the field. Whilst these may be seen as simple tools it must be remembered that the slightest malfunction of the control system can damage a valve actuator beyond repair necessitating an expensive and time consuming module swap out.

These systems are being used by CNR International, McDermott Caspian Contractors, Technip, Oceaneering, Subsea7 (Australia, North Sea, Brazil, Gulf of Mexico, West Africa, Singapore, etc.), Fugro-Singapore, Fugro-Rovtech, Fugro-imPROV and others.

### Robotic Drill System & Seabed Corer.

A complex Jupiter system is used by the British Geological Survey to control the operation of their Deepwater seabed drill & core sampling tool.

### Suction Anchor Installation.

Jupiter Systems are used by Saipem, Subsea 7, Fugro-Singapore and Technip for the installation of Suction Anchors. Like Torque Tool Control Systems, the slightest malfunction can result in the collapsing of a Suction Anchor, which in extreme circumstances can force the complete redesign of subsea field installations.

### Miscellaneous Systems

Jupiter Systems have been used by ABB Offshore Systems AS for the control of the SNORRE B RCR Tool, Acergy have used three Jupiter Systems for the control of various deepwater intervention tools including a Flowline Insulation Installation Tool.

A Jupiter system was used by CUT to control and monitor the operation of a Diamond Wire Cutting Tool. The measured cut rate was used to control the wire speed and wire extension measurement was monitored to predict & prevent wire failure.





### Subsea Sensing Systems

Zetechtics manufacture a wide range of battery powered subsea sensors that can be fitted to subsea equipment that do not need complex control systems. Sensors include accurate pressure gauge monitoring, valve actuation counters, simple on/off sensor state monitoring, etc. The sensors are designed to use as little battery power as possible and can stay dormant for months or even years before being awakened by ROV lighting.

### Subsea Torque Verification

Zetechtics manufacture a State of the Art Subsea Torque Verification System to allow operators & their clients to check the accuracy of torque tool settings whilst subsea potentially saving significant amounts by preventing accidental over torque on valve stems and obviating the requirement for lengthy retrievals to check torque tool settings on deck.

In addition, a UKAS accredited calibrator is also available for SSTVS recalibration in remote locations.



Zetechtics were awarded the Queens Award for Enterprise: Innovation in 2003 for the new developments within the Jupiter System.

