Reaching beyond its class – The Versatile and Lightweight Observation ROV
David Owen, Technical Manager – ROV Products
Seatronics Overview

✓ Industry leading supplier to the Oil and Gas Sector established for >40 years

✓ Part of the Acteon Group since 2007

✓ Widely acknowledged as leading sensor integrator / solution provider within this sector

✓ Global footprint, considered number 1 in our field
The Road to VALOR

✓ Seatronics acquire Predator ROV IP in 2010

✓ Not our intention to become an ROV manufacturer

✓ Purpose to offer advanced survey solutions from a small ROV platform

✓ Moderate success, O&G markets, reluctance to adopt new technology. Tried and tested = Safe

✓ Fast forward to September 2014 – Global Oil & Gas Crash
Introducing the VALOR

- VALOR Development Program – started late 2017
- Actively positively disrupt existing markets
- Undertake tasks typically associated with work-class platforms
- More connectivity than any other platform available
- Standardise on cutting edge technology
- Offer a flexible / configurable platform
- Do more with less
- Truly reusable capability

- Dimensions: 860 x 600 x 550mm.
- 80kg air weight. 21kg payload at 300m rating
Technology = Big Data

- Sensor technology has improved
  - HD cameras
  - Multibeam sonar
  - Inertial Navigation
  - Laser scanning solutions
  - Photogrammetry packages

- Produces a new challenge
  - ROV systems limited connectivity
  - Advanced work class systems ~3 or 4Gb bandwidth

- Gigabit Ethernet connectivity increasingly required
  - Localised timing and synchronisation
  - Sensor bandwidth requirements exceed availability
Existing ROV Technology was static. Look to new areas

- Ethernet based - 40Gb Ethernet/Optical Switch (COTS)

- Supports up to 10 x User configurable sensor ports
  - Each port is standard and configurable through software
  - Each port provides power, 1Gb Ethernet and serial channels

- HD Camera technology supplied as standard

- INS embedded in the system design

- Solved the bandwidth problem
VALOR – Control System

✓ Syntonic Control System

✓ Vehicle sensors updating at 30Hz

✓ Ability to utilise 100% of available power from thruster package

✓ Increases payload capacity / current handling capability

✓ Flexibility of the platform
Intelligent Detection and Tracking

- Advanced vehicle tracking
- Object classification
  - Advanced computer vision techniques
  - AI Deep learning
- Extensive testing carried out to ensure operational suitability
VALOR – Power

✓ Ability to harness full potential from thruster package

✓ Combined bollard pull of 98kgf

✓ Nothing in this class that offers this level of power

✓ Provides the user with a truly flexible range of solutions
VALOR - Engineered Solution

✓ Detailed engineering analysis
  ✓ Vehicle performance / current handling capabilities
  ✓ Proposed deployment solution
  ✓ Meet and exceed specifications adding capability and an enhanced operational window
✓ Conduct environmental trials
  ✓ Edinburgh University Flow Wave Facility
  ✓ Independent verification of performance
  ✓ Comparison trials
3.0 Knots
Proven Current Handling
CONCLUSIONS

✓ Use of advanced sensor technology
✓ Simplified operations
✓ Increased automation / system autonomy
✓ Ability to complete complex tasks using less skilled personnel
✓ Highly configurable multi purpose tool box
Thank you for your time.
David Owen – Technical Manager – ROV Products