Schmidt Ocean Institute
ROV Subastian Specification
v1.5   06/27/16

**Mechanical specifications**
- Maximum operating depth: 4500m
- Overall dimensions: 2.7m x 1.8m x 1.8m
- Maximum transit speed: 3 knots
- Vehicle weight in air: 3200kg
- Payload weight in air: 200kg

**Electrical requirements**
- Topside PDU: 370/390/410V three-phase 50/60Hz, ~90A typical
- Support van: 240/390/480V single-phase 50/60Hz, ~30A typical

**Control system**
- Operator interface: Greensea Systems Balefire
- Control modes: Conventional open-loop thrust or closed-loop position/velocity
- Logging facility: All navigation and core science sensors logged via. black box
- Still image capture: Situational and science cameras, with annotation queue facility
- Video recording: Situational and science cameras, plus four auxiliary cameras

**Hydraulic system**
- HPU: 45hp motor with 100cc pump
- Manipulators: 2 x Schilling Titan 4 (T4)
- Thrusters: 5 x SubAtlantic, orthogonal
- Thruster valve pack: 6ch proportional, 60Lpm
- Tooling valve pack: 8ch proportional, 15Lpm
- Science valve pack: 8ch proportional, 15Lpm

**Sonar**
- Scanning sonar: Tritech Super SeaKing DST
- Imaging sonar: Teledyne BlueView M900

**Lighting**
- Spot lighting: 4 x CathX APHOS 16, 28,000lm
- Strobe lighting: 2 x CathX APHOS 32, 100,000lm
- Flood lighting: 10 x DSPL SeaSphere, 8,500lm
- Local lighting: 6 x DSPL SeaSphere, 6,000lm

**Imaging**
- Situational camera: SULIS H100
  - video standard: 4K UHD 2160p
  - still image resolution: 12 megapixels
  - actuator facility: Vertical tilt only
- Science camera: SULIS Z70
  - video standard: 4K UHD 2160p
  - still image resolution: 20 megapixels
  - actuator facility: Pan / tilt / extend
  - zoom facility: 12X optical zoom
  - scaling lasers: 10cm spacing
- Auxiliary cameras: DSPL MSC (HD)
  - port side peripheral cam
  - stbd side peripheral cam
  - umbilical monitor cam
  - rear view cam (wide fov)
  - manipulator arm cam
  - tooling/payload cam 1
  - tooling/payload cam 2
  - tooling/payload cam 3

**Navigation sensors**
- MRU: Sonardyne Lodestar
- INS: Sonardyne SPRINT
- USBL: Sonardyne Syrinx
- Depth: Sonardyne WMT 6G
- SV: Valeport miniIPS
- AML SV Xchange

**Core science sensors**
- Temperature: PT100-based High-T probe
- Depth: Paroscientific DigiQuartz
- CTD: SeaBird FastCAT SBE49
- O2: Aandera O2 optode 4831

**Physical sampling**
- Biological collection: Large and small sealed boxes
- Water sampler: Niskin bottles, 4 x 5L samples
- Suction sampler: Cellula Robotics, 8 x 2L samples
- Push core tubes: MBARI design, 24 x 10" cores

**Available interfaces**
- AC power: 230V AC up to 2400W (other voltages via. transformers)
- DC power: 24V DC up to 350W (other voltages via. DC converters)
- Serial ports: 8 ports, RS-232 / RS-485
- Ethernet (10/100): 2 ports via. science junction box
- Ethernet (Gigabit): 3 ports via. dedicated connectors
- Fiber optics: 2 available single-mode dark fibers