Daurade (Démonstrateur d'AUv de ReA DiscrEt): a multi-purpose experimental AUV for REA applications

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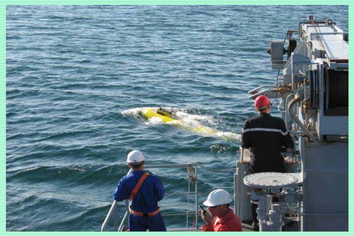
Performances

- ✓ Mass: 1 000 kg
- ✓ Length: 5 m
- ✓ Main diameter: 0.7 m
- ✓ Maximum speed: 8 knots
- ✓ Nominal speed: 4 knots
- ✓ Endurance: 10 hours at 4 knots
- ✓ Depth: 0 to 300 m
- ✓ Turning radius: 11 m
- ✓ Rate of roll: < 0.5°/s
- ✓ Rate of course on track: < 0.2°/s
- ✓ Very accurate clock (drift < 2.10^{-8})
- ✓ Sensors synchronization
- ✓ Charge cycle < 12 hours

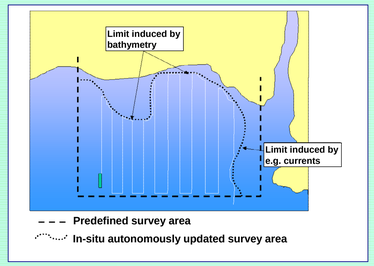
The challenges

- ➢ Accurate and discrete positioning
- ➢ Gathering of accurate hydrographic and oceanographic parameters
- ➢ Discretion
- ➢ Range
- ➢ Manoeuvrability
- ➢ Obstacle avoidance capability
- ➢ Inboard decision-making
- ➢ Adaptative survey capabilities
- ➢ Radio and sound communications
- ➢ Quick reconfiguration
- ➢ Efficient data exploitation
- ➢ Data fusion capabilities

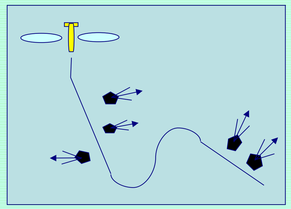


Studies

- ➢ Adaptative survey:
  - Optimisation of coverage:

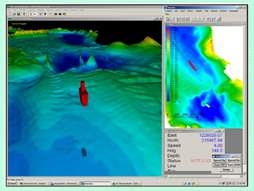


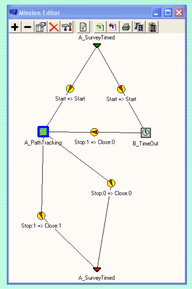
  - object detection and re-survey:

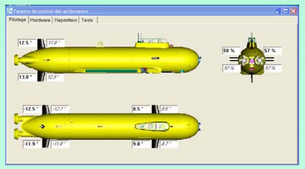
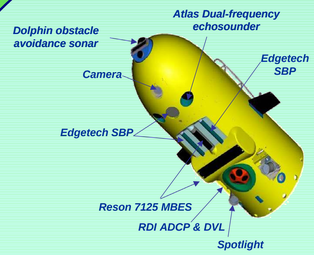
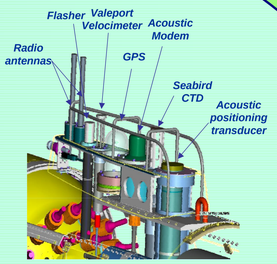
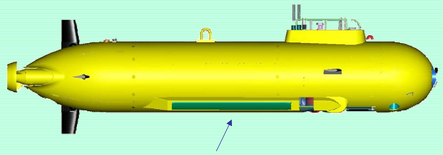


- ➢ Navigation:
  - In-situ navigation update
  - Obstacle avoidance strategies
- ➢ Data processing:
  - Automated data processing
  - Data fusion

Mission planning and control







Sensors