The PERSEUS Concept of an innovative research vessel

**Principal base unit:**
- open deck configuration

**Configuration with lateral A-Frame, wet and dry labs**

**Configuration with customizable containerized labs**

**Main specifications:**
- **LOA:** 19.5m
- **B:** 6.7m
- **D:** 3.2m
- **T:** 1.25m
- **Speed:** 16 knots
- **Crew:** 4
- **Scientists:** 4+4

**Innovation**

One of the main innovation of PERSEUS vessel is the new conceptual vertical axis propulsion system with orbital blades, called PIVOT (Pasetto Innovative Variable Orientable Thruster). This system is constituted by a pair of contra-rotating impellers, which provide directional thrust to 360°, allowing in each case a centered thrust, avoiding parasitic components.

The PIVOT system allows getting both propulsion and steering for ships and boats from the same mechanical device. This system is proved suitable for congested areas and inland waterways, shallow water with a limited height of the blades, a complete absence of rudders, and the ability to perform maneuvers to 360°. Its use in open sea activities is suggested as well for its high efficiency and maneuver capabilities, so as to be used in dynamic positioning operations.

**Flexibility**

What the initial analysis and the design process of PERSEUS research vessel revealed is the requirement of multiple vessel configurations varying from operator (institute, stakeholders, etc). The aim of the new vessel is to adapt in response to changing, be flexible in a possible and probable way, customizable for different scientific purposes.

The innovative design optimizes the vessel’s space dedicated to the work/scientists giving to the working space a full flat area on the main deck.

The research/survey vessel is designed to offer a principal base unit that contains:
- Under the main deck: the engine room, cabins and living areas. For this reason a mono hull has been chosen.
- Above the main deck: the wheelhouse that fits all the instruments for the navigation, the DP system, a small office and services.

The superstructure has been placed in the forward area to obtain a free deck area of 86 sqm. The working area is fully customizable in the building fase by every institute or consorzium and can simply and fully adapt in function of specific requirements.