


Ref no 1	Project title		<b>HOLISTIC OPTIMISATION OF SHIP DESIGN AND OPERATION FOR LIFE CYCLE: HOLISHIP</b>					
Name of legal entity	Country	Overall contract value (€)	Proportion carried out by legal entity (%)	No of staff provided	Name of client	Origin of funding	Dates (start/end)	Name of consortium members, if any
	Malta	11.431.746	3%	10	European Commission, H2020	European Commission, H2020	9/2016 9/2020 (Ongoing)	HSVA, ALS Marine, AVEVA, BALANCE, Bureau Veritas, NTUA, DLR, Navantia,+31more
Detailed description of project					Role of the company/ Solutions/ Technologies Implemented			
<p><b>HOLISHIP objectives:</b></p> <ul style="list-style-type: none"> <li>• <b>Develop Software</b> (s/w) tools for multi-objective and multi-disciplinary holistic system optimisation and <b>integration to design ships and offshore structures for operation</b>, over the entire life-cycle.</li> <li>• <b>Develop and test a Virtual Vessel Framework</b> (VVF) to be used in design optimisation and concept validation studies resulting in more efficient and safe ships.</li> <li>• Improve ship design through improved operational feedback from a complex system into the design loop.</li> <li>• Achieve measurable life-cycle cost reductions through innovative holistic ship design and demonstrate this for typical European applications.</li> <li>• Reduce ship development time and costs through innovative design optimization and integration procedures.</li> <li>• Demonstrate methods to find optimal and innovative ship configurations according to measurable technical performances and ship operations.</li> </ul> <div data-bbox="358 829 1030 1252" data-label="Diagram"> <p>The diagram illustrates a three-tier architecture. At the top is the <b>Application Layer</b> (orange), containing a <b>TI/Manager/Agent interface</b> and two <b>Client Interface</b> components (one for a browser, one for an app). These connect to the <b>Application Server</b> (purple) via <b>Simple Object Access protocol</b> and <b>HTTP protocol</b>. The Application Server includes <b>Authorization/Authentication - Security</b>, <b>Web Service</b>, and <b>Data &amp; Product Components - User Control</b>. It also contains <b>Server</b> components (Toolbar, Work List, Mail Service, Queue) and <b>SQL Service</b> components (SQL Catalog, Report, Processing, Rendering). At the bottom is the <b>Data Layer</b> (red), which includes a <b>Data and model Store</b> and <b>DB Reports</b>.</p> </div>					<p>Mainly, <b>EPSILON</b> is responsible for:</p> <ul style="list-style-type: none"> <li>• supporting the effort on the development of the 4 main elements for the LCPA (Life Cycle Performance Assessment) tool: (1) A <b>Ship configurator</b> (SC) which will utilize the parameterized components from the component database or extends existing ship models from the ships database. The SC will generate the LCPA model which is used by the analyzing algorithms of (2) <b>Decision support system</b> (DSS) which allows to configure the individual target function. (3) In the <b>Serious game</b> (SG) module the user can dynamically modify the boundary conditions for the operating profile and the market environment. (4) Finally, the <b>package of all the components into one tool</b> which will eventually be able to <b>provide a web-service</b> by itself.</li> </ul> <div data-bbox="1176 941 2038 1165" data-label="Image"> <p>A detailed illustration of a large, modern grey and white ship, likely a research vessel or a specialized cargo ship, shown from a side profile.</p> </div> <ul style="list-style-type: none"> <li>• releasing the <b>Tool for use and integration into the HOLISHIP</b> platform, including the integration of the Tool per se and the linkage to the LCPA Tool database on the web, continuous refinement, going public, and testing market acceptance.</li> <li>• developing the Manual for use of Life Cycle Performance Tool</li> <li>• will contribute to the collection and <b>analysis of the LCPA Tool Requirements and development of the Specifications for the Tool.</b></li> </ul>			