Claims

[Claim 1] A docking device comprising a docking station able to be connected to a carrying vessel by a cable so that the carrying vessel hauls the docking station, fully submerged, via the top of the docking station by exerting a pulling force at a tow point (T) on the docking station, the docking station comprising a body comprising a beam extending longitudinally parallel to a longitudinal axis (x) of the body and a stop allowing a movement of an underwater vehicle with respect to the body along the longitudinal axis (x) to be blocked, in a direction directed from the rear forward defined by the longitudinal axis (x), the stop and the beam being arranged relative to one another in such a way that the dorsal beam extends longitudinally above the underwater vehicle in abutment against the stop, the docking station being hydrodynamically profiled, a center of gravity of the docking station and a center of buoyancy of the docking station being positioned, and the tow point (T) being able to occupy a docking position of the tow point (T) that is defined in such a way that the docking station exhibits a predetermined docking negative pitch when it is fully submerged and hauled by the carrying vessel in the direction of the longitudinal axis at a predetermined speed.

[Claim 2] The docking device as claimed in claim 1, wherein the docking station has negative buoyancy in water.

[Claim 3] The docking device as claimed in claim 2, wherein the station is hydrodynamically profiled and configured in such a way that a center of gravity of the docking station and a center of buoyancy of the docking station are positioned in such a way that a first return torque is applied to the fully submerged docking station having a pitch between the docking negative pitch and the zero pitch when the underwater vehicle is in abutment against the stop, so as to tend to press the dorsal beam against the underwater vehicle through rotation of the docking station with respect to the underwater vehicle in a vertical plane.

[Claim 4] The docking device as claimed in claim 1, wherein the docking station is configured in such a way that a center of gravity of the docking station and a center of buoyancy of the docking station are positioned in such a way that a first hydrostatic return torque is applied to the fully submerged docking station having a zero pitch when the underwater vehicle is in abutment against the stop, so as to tend to press the dorsal beam against the underwater vehicle through rotation of the docking station with respect to the underwater vehicle in a vertical plane.

[Claim 5] The docking device as claimed in claim 4, wherein the center of gravity is located behind the stop along the longitudinal axis (x).

[Claim 6] The docking device as claimed in claim 1, wherein the docking station is configured in such a way that a resultant of the thrust generated by a part of the docking station situated behind the stop or behind the docking position of the tow point is oriented downward or is zero.

[Claim 7] The docking device as claimed in claim 1, wherein the docking station is configured in such a way that a center of gravity of the docking station and a center of buoyancy of the docking station are positioned in such a way that, when the underwater vehicle is in abutment against the stop, a second hydrostatic return torque is applied to the docking station around the longitudinal axis (x) when the pitch of the docking station is zero, so that the docking station exhibits a position of stable equilibrium in rotation about the longitudinal axis x with respect to the underwater vehicle.

[Claim 8] The docking device as claimed in claim 7, wherein the center of gravity of the docking station is positioned below the longitudinal axis (x) when the pitch of the docking station is comprised between the docking pitch and the zero pitch.

[Claim 9] The docking device as claimed in claim 7, wherein the docking station comprises a set of guiding arms distributed around the stop, which set is able to be in a deployed configuration in which the arms are able to guide the underwater vehicle toward the stop, the set of arms comprising lower arms situated beneath the longitudinal axis (x) when the axis (x) is horizontal and the docking station is in the position of stable equilibrium, the lower arms having a higher mean density than arms of the set of arms that are situated above the axis (x).

[Claim 10] The docking device as claimed in claim 1, comprising the cable, the cable is connected to the body of the docking station in such a way that the tow point (T) advances along the longitudinal axis (x) with respect to the body when the underwater vehicle comes into abutment against the stop.