CLAIMS

1. An underwater system comprising:

an underwater device intended to be towed by a surface vessel and including a traction cable, a flexible elongate body and an assembly comprising at least one towed body, situated between the flexible elongate body and the traction cable, wherein the at least one towed body integrates a transmit antenna for emission of acoustic waves and the at least one towed body is a body elongate along a longitudinal axis, and wherein the flexible elongate body comprising a receiving antenna comprising a plurality of electro-acoustic transducers distributed along the flexible elongate body, and the transmit antenna comprises a plurality of electro-acoustic transducers distributed along the longitudinal axis; and

a handling device intended to be installed on the surface vessel to enable stowage and deployment of the underwater device the handling device comprising a winch comprising a frame intended to be attached to a structure of the surface vessel and a first drum capable of turning relative to the frame about a first rotation axis and an assembly comprising at least one second drum which surrounds the first drum and is capable of turning relative to the frame about a second rotation axis substantially parallel to the first rotation axis, the winch being capable of being in a decoupled state in which the first drum and the second drum are rotationally decoupled about the first rotation axis and the second rotation axis so as to allow the traction cable to be wound around the first drum during a first winding step in which the first drum is rotated about the first axis, the second drum being capable of being in an open state in which the second drum has a receiving opening that the towed body is capable of passing through in order to enter the interior of the space that surrounds the first drum and that is surrounded by the second drum, the winch being capable of being in a coupled state in which the first drum and the second drum are rotationally coupled about the second rotation axis so as to allow the flexible elongate body to be wound around the second rotation axis during a second winding step in which the second drum is rotated about the second axis.

2. The underwater system as claimed in the preceding claim, the second drum being capable of being in a receiving angular position about the second axis relative to the frame in which the receiving opening is intended to have the traction cable and the towed body passed through it during the first winding step.

3. The underwater system as claimed in either one of the preceding claims, in which the receiving opening is elongate along the first rotation axis.

4. The underwater system as claimed in any one of the preceding claims, in which the first drum and the second drum are concentric.

5. The underwater system as claimed in any one of claims 1 to 3, in which the second rotation axis is at a distance from the first rotation axis.

6. The underwater system as claimed in any one of the preceding claims, in which the second drum is capable of being alternately in the open state and in a closed state in which the receiving opening is at least partly closed.

7. The underwater system as claimed in the preceding claim, in which at least one second drum comprises a cap mobile relative to a first part of the second drum, the cap being capable of being in a first position in which the cap opens the second drum so that it comprises the receiving opening and in a second position in which the cap substantially closes the receiving opening so that the second drum has a substantially cylindrical shape.

8. The underwater system as claimed in any one of the preceding claims, wherein the handling device further comprises a traverse winding device that is capable of ordering winding of the traction cable on the winch, the traverse winding device comprising two lateral deflectors spaced along the first rotation axis, the traverse winding device being capable of being in a traverse winding state in which a small distance separates the lateral deflectors along the first

rotation axis and in a receiving state in which a greater distance separates the deflectors.

9. The underwater system as claimed in any one of the preceding claims, wherein the handling device further comprises an assembly comprising a plurality of second drums.

10. The underwater system as claimed in any one of the preceding claims, in which the towed body is a compact hydrodynamic body having a flattened general shape and being suspended from the traction cable when the handling device is deployed.

11. The underwater system as claimed in any of one of the preceding claims, in which the handling device is configured so as to enable stowage of the towed body in a space that surrounds the first drum and that is surrounded by the second drum without the towed body exiting the space radially.

12. The underwater system as claimed in any one of the preceding claims, in which the underwater system is configured so that, during the first winding step, the towed body passes through the receiving opening in an orientation in which the longitudinal axis is substantially parallel to the first rotation axis and/or so that the towed body arrives in the vicinity of the carrier vessel in the orientation in which the longitudinal axis is substantially parallel to the first rotation axis.

13. The underwater system as claimed in any one of the preceding claims, in which the handling device is configured to execute the following steps during a process of stowing the initially deployed underwater device:

the first winding step in which the first drum of the winch, being in the decoupled state, is rotated about the first rotation axis relative to the frame so as to come to wind the traction cable around the first drum, the traction cable passing through the receiving opening, and so that the towed body enters into the space delimited by the second drum through the receiving opening, followed

by a winding step in which the second drum of the winch, being in the coupled state, is rotated about the second rotation axis so as to wind the flexible linear element around the second drum.

14. The underwater system as claimed in any one of the preceding claims, in which the underwater device comprises an assembly comprising a plurality of towed bodies.