THE CLAIMS

We claim:

1. A method of retrieving a mobile platform (100) from a tank (10) having a hatch (24) and at least partially filled with a non-conductive, energetic substance (12, 14), the method characterized by:

- configuring the mobile platform (100) to include at least:
  - an enclosure (200),
  - at least one control unit (300) positioned inside the enclosure (200),
  - at least one propulsion system (400) positioned at least partially inside the enclosure (200),
  - at least one power supply (500) positioned inside the enclosure (200), and
  - at least one retrieval system (700) disposed at least partially on the enclosure (200) and including at least:
    - at least one buoyant body (702),
    - at least one primary tether (1100) connected to the at least one buoyant body (702) and to the enclosure (200);
    - at least one secondary tether (1102) connected to the at least one buoyant body (702) and to the enclosure (200);
- predetermining a buoyant body retrieval zone (1104) within the tank (10), wherein the buoyant body retrieval zone (1104) is below the hatch (24);
- lowering the mobile platform (100) into the tank (10) using a deployment carrier (50, 764, 780);
- submerging the enclosure (200) in a non-conductive, liquid energetic substance (12);

- moving the mobile platform (100) using the at least one propulsion system (400) to perform at least one task in the tank (10);

- releasing the at least one buoyant body (702) and the at least one primary tether (1100) from the enclosure (200);

- positioning the released at least one buoyant body (702) within the buoyant body retrieval zone (1104) by using the at least one primary tether (1100);

- accessing the at least one buoyant body (702) through the hatch (24);

- retrieving the at least one primary tether (1100) by using the at least one buoyant body (702);

- using the at least one primary tether (1100) to release the at least one secondary tether (1102); and

- inserting a retrieval member (1110) through the hatch (24) to retrieve at least one of: (i) the at least one buoyant body (702), (ii) the at least one primary tether (1100), and (iii) the at least one secondary tether (1102).

2. The method of claim 1, further characterized by:

- estimating a height of the non-conductive, liquid energetic substance (12) above the mobile platform (100) inside the tank (10); and

- selecting a length of the at least one primary tether (1100) based on at least the estimated height of the non-conductive, liquid energetic substance (12) above the mobile platform (100) inside the tank (10) to position the at least one buoyant body (702) within the buoyant body retrieval zone (1104).

3. The method of claim 2, wherein the length of the at least one primary

tether (1100) is also selected using at least a distance between a retrieval location (1112) of the mobile platform (100) and a wall (20) of the tank (10).

4. The method of claim 1, further characterized by:

- configuring the at least one primary tether (1100) to release the least one secondary tether (1102) in response to an applied predetermined releasing force; and

- applying a force that is at least as great as the predetermined releasing force to the at least one primary tether (1100) to release the at least one secondary tether (1102).

5. The method of claim 4, further characterized in that the predetermined releasing force is greater than a net buoyancy of the buoyant body (702) in the non-conductive, liquid energetic substance (12) and less than a net downward force of the mobile platform (100) in the non-conductive, liquid energetic substance (12).

6. The method of claim 1, further characterized in that the at least one secondary tether (1102) is at least long enough to traverse a distance between the mobile platform (100) and a location proximate to a top wall (16) of the tank (100).

7. The method of claim 1, further characterized in that a combined length of the at least one primary tether (1100) and the at least one secondary tether (1102) is at least long enough to traverse a distance between the mobile platform (100) and a location proximate to a top wall (16) of the tank (100).

8. The method of claim 1, further characterized in that the at least one

secondary tether (1102) is used to pull the mobile platform (100).

9. The method of claim 1, further characterized in that the length of the at least one primary tether (1100) is selected to maintain a predetermined gap between the buoyant body (702) and a top wall (16) of the tank (10).

10. The method of claim 1, further characterized in that the at least one primary tether (1100) includes a plurality of primary tether segments.

11. The method of claim 1, further characterized in that the at least one secondary tether (1102) includes a plurality of secondary tether segments.

12. The method of claim 1, further characterized in that the at least one primary tether (1100) connects the at least one secondary tether (1102) to the enclosure (200).

13. The method of claim 1, further characterized in that the at least one secondary tether (1102) connects the at least one primary tether (1100) to the enclosure (200).

14. The method of claim 1, further characterized in that the enclosure (200) includes a plurality of separate enclosures, and at least one enclosure (200) of the plurality of separate enclosures is submerged in the non-conductive, liquid energetic substance (12).