We Claim

1. A subsea system, comprising:

a subsea component for disposal in seawater; and

a disruptive coupling device coupled to the subsea component and comprising:

a bladder enclosing at least partially a fluid,

a housing, and

an opening formed in the housing to allow the seawater to flow into the housing from outside of the housing, wherein the disruptive coupling device is configured to move at least a portion of the fluid relative to the subsea component in response to a load applied by the seawater to increase or decrease a mass of the disruptive coupling device, and a volume of the disruptive coupling device varies in response to the load applied by the seawater.

2. The subsea system of claim 1, wherein the subsea system is disposed adjacent to or under a fixed or floating offshore structure.

3. The subsea system of claim 1, wherein the subsea system is disposed as a stand-alone system on a seafloor.

4. The subsea system of claim 1, wherein the disruptive coupling device is mounted to the subsea component, formed in the subsea component, or connected to the subsea component.

5. The subsea system of claim 1, wherein the fluid is a portion of the seawater.

6. The subsea system of claim 1, wherein the fluid comprises one or more of water, air, nitrogen, oil, or a subsea production fluid separated from the seawater.

~~7. The subsea system of claim 1, wherein the movement of the at least the portion of the fluid is configured to affect a mass of the subsea component by increasing the mass, decreasing the mass, or distributing the mass.~~

~~8~~7. The subsea system of claim 1, wherein the subsea component comprises at least one of: a riser in any configuration, an umbilical, a flowline, a manifold, an in-line structure, a jumper, a pipeline end termination (PLET), a pipeline end manifold (PLEM), subsea storage equipment, subsea processing equipment, a midwater buoy, a midwater arch, or a midwater structure.

~~9~~8. The subsea system of claim 1, wherein the disruptive coupling device further comprises at least one of: a valve, a pump, a variable orifice, a damper, a protrusion that protrudes from the subsea component, an opening formed in the subsea component, or an enclosed volume enclosing the fluid.

~~10~~9. The subsea system of claim 1, wherein a mitigation frequency of the disruptive coupling device is independent of a loading frequency of the seawater.

~~11~~10. The subsea system of claim 1, wherein the fluid is compressible such that a volume of the fluid reduces upon application of pressure to the fluid.

~~12~~11. A subsea installation system, comprising:

an installation vessel comprising one or more lifting devices;

a subsea component disposed in seawater and supported at least partially on the installation vessel; and

a disruptive coupling device coupled to the subsea component and comprising:

a bladder enclosing at least partially a fluid,

a housing, and

an opening formed in the housing to allow the seawater to flow into the housing from outside of the housing, wherein the disruptive coupling device is

configured to move at least a portion of the fluid relative to the subsea component in response to a load applied by the seawater to increase or decrease a mass of the disruptive coupling device, and a volume of the disruptive coupling device varies in response to the load applied by the seawater.

~~13~~12. The subsea installation system of claim ~~12~~11, wherein the fluid is a portion of the seawater.

~~14~~13. The subsea installation system of claim ~~12~~11, wherein the fluid comprises one or more of water, air, nitrogen, oil, or a subsea production fluid.

~~15~~14. A subsea system, comprising:

a subsea component disposed in seawater; and

a disruptive coupling device coupled to the subsea component, the disruptive coupling device comprising:

a chamber housing;

a chamber disposed within the chamber housing, the chamber having a first fluid in an upper portion of the chamber, and a second fluid in a lower portion of the chamber; and

a barrier wall and a check valve disposed between the lower portion and the upper portion, the check valve configured to allow the second fluid to flow out of the lower portion and into the upper portion.

~~16~~15. The subsea system of claim ~~15~~14, wherein the second fluid is a portion of the seawater.

~~17~~16. The subsea system of claim ~~15~~14, wherein a density of the first fluid is lesser than a density of the second fluid.

~~18~~17. The subsea system of claim ~~15~~14, wherein the disruptive coupling device further comprises a check valve disposed in a first opening formed in the chamber housing to allow the second fluid to flow into the lower portion.

~~19~~18. The subsea system of claim ~~15~~14, wherein the disruptive coupling device further comprises a check valve to allow the first fluid to flow out of the upper portion and into a designated area outside of the chamber.

19. The subsea system of claim 14, wherein the disruptive coupling device further comprises a check valve disposed in a second opening formed in the chamber housing to allow the second fluid to flow out of the lower portion and out of the chamber.