When the Side-by-Side System is used, the LNGC is moored Side-by-Side relative the FLNG. The distance between them being only a few meters. The Side by Side System is relatively weather sensitive due to the risk of collision between the vessels.

The main advantage of the Side-by-Side System is that the distance between the manifold of the LNGC and the FLNG is relatively short. Traditional loading arms, short hoses, or similar that stretches through the air between the two vessels, may be used. Floating or submerged hoses exposed to waves and current are therefore not required. Since the length of the fluid transfer system is shorter, the pressure drop in the hoses are lower and standard pumps may be utilized. When loading LNG, the amount of boil-off gas is also significantly lower.

EP 2121426 shows a vessel having azimuth thrusters installed in order to improve manoeuvrability during loading operations.

In this document, the term "Parallel" configuration is utilized, mainly to distinguish the present method and system from the "Side-by-Side" configuration. The meaning of the term Parallel configuration is defined in the description below, and includes positioning a second vessel by the help of a self-propelled buoy relatively close to a first vessel.

The invention has for its object to remedy or to reduce at least one of the drawbacks of the prior art, or at least provide a useful alternative to prior art.

The object is achieved through features, which are specified in the description below and in the claims that follow.

There is provided a method for cargo fluid transfer between vessels at open sea. A cargo line is connectable between a first vessel and a self-propelled buoy. The self-propelled buoy is attachable to a second vessel and designed to keep the self-propelled buoy safely within predetermined distance boundaries from the first vessel also when the second vessel is attached to the self-propelled buoy in a Parallel configuration.

The self-propelled buoy is equipped with a cargo connection that is connectable to a manifold on the second vessel.

The invention is defined by the independent patent claims. The dependent claims define advantageous embodiments of the invention.

C l a i m s

1. A Method for transferring fluid cargo between a first vessel and a second vessel at open sea in a Parallel configuration, wherein the first vessel is equipped with a cargo connection point at a stern portion of the first vessel, wherein the second vessel is equipped with cargo manifold, and wherein a tubular line is connectable between the cargo connection point and the cargo manifold, the method comprising:
   - attaching a self-propelled buoy to the second vessel;
   - connecting a cargo connection between the self-propelled buoy and the cargo manifold;
   - connecting a cargo line between the cargo connection point and the self-propelled buoy;
   - transferring the fluid cargo between the cargo connection point and the second vessel ;
   - relying on the self-propelled buoy to keep the self-propelled buoy within predetermined distance boundaries from the first vessel also when the self-propelled buoy is attached to the second vessel , the second vessel being allowed to turn at an angle relative to the first vessel.

2. The method according to claim 1, wherein the method includes attaching the self-propelled buoy to the second vessel prior to connecting the cargo line between the cargo connection point and the self-propelled buoy.

3. The method according to claim 1 or 2, wherein the method includes allowing the second vessel to keep the desired heading of the second vessel by use of its propulsion machinery controlled by its auto-pilot.

4. The method according to any preceding claim, wherein the method includes emergency disconnecting the cargo line between the cargo connection point and the self-propelled buoy and letting the second vessel with the self-propelled buoy attached, drift off from the first vessel.

5. The method according to any preceding claim wherein the method includes:
   - first attaching a DPS self-propelled buoy to the second vessel;
   - then attaching the self-propelled buoy with the cargo line connected, to the second vessel.

6. A system that transfers fluid cargo between a first vessel and a second vessel at open sea in a Parallel configuration, wherein the first

vessel is equipped with a cargo connection point at a stern portion of the first vessel and the second vessel is equipped with a cargo manifold , the system comprising:

a tubular line connected between the cargo connection point of the first vessel and the cargo manifold of the second vessel;

a cargo line extending from the cargo connection point at least one self-propelled buoy connected to the cargo line; and

a cargo connection connected between the self-propelled buoy and the cargo manifold; wherein the self-propelled buoy is connected to the second vessel, and is configured to keep within predetermined distance boundaries from the first vessel also when the self-propelled buoy is attached to the second vessel, the second vessel being allowed to turn at an angle relative to the first vessel.

7. The system according to claim 6, wherein the first vessel is designed to weather vane.

8. The system according to claim 6 or 7 wherein the cargo connection point is at a position distant from a flare tower on the first vessel.

9. The system according to any of claims 6 to 8, wherein the first vessel is equipped with a support boom for the cargo line.

10. The system according to any of claims 6 to 9, wherein the cargo line is a hardpipe with swivels.

11. The system according to any of claims 6 to 10, wherein the cargo line is in the form of a submersible or floatable hose.

12. The system according to any of claims 6 to 11, wherein a service vessel is connectable to the second vessel.