

## CLAIMS

1. A system (100), comprising a catheter (1), the catheter (1) comprising an elongate tubular portion (11) and at least one connected device (230), the elongate tubular portion (11) configured to be inserted into a patient's blood vessel and having a proximal end (21) and a distal end (22) and a lumen (12) extending from the proximal end (21) to the distal end (22), each connected device (230) connected to the elongate tubular portion (11) and having at least one cavity (13), wherein the at least one cavity (13) is in fluid communication with the lumen (12) of the elongate tubular portion (11),  
wherein the system further comprises at least one sensor (15) for detecting an orientation of at least one of the elongate tubular portion (11) and the at least one connected device (230).
2. The system of claim 1, further comprising a control unit (5) configured to receive data from the at least one sensor (15) including the orientation detected by the at least one sensor (15) and to determine whether the detected orientation matches an orientation in which air is releasable from the cavity (13).
3. The system of claim 1 or 2, wherein a difference of the detected orientation and a predetermined orientation is computable to guide a user to change the orientation in order to approach the predetermined orientation.
4. The system of any one of claims 1 to 3, wherein the control unit (5) is configured to display at least one of: a matching indicator representing the matching of a detected orientation with an orientation in which air is releasable from the cavity (13), the detected orientation, and a representation indicating the difference between the detected orientation and the predetermined orientation.
5. The system of claim 3 or 4, wherein the predetermined orientation is a vertical orientation or a conical range around a vertical axis defined by a predetermined angle.
6. The system of any one of claims 1 to 5, wherein the at least one sensor (15) is arranged in the connected device (230) and configured to detect an orientation of the connected device (230).

7. The system of any one of claims 1 to 6, wherein the at least one sensor (15) includes at least one of a gravity sensor, an accelerometer and a gyroscope.

8. The system of any one of claims 1 to 7, further comprising a pump unit (2), and a drive unit (4) to provide an intravascular blood pump (10) for percutaneous insertion  
5 into a patient's blood vessel, wherein the pump unit (2) is one of the at least one connected device (230) and is disposed at the distal end (22) of the elongate tubular portion (11) of the catheter (1) and comprises a cavity (13), the pump unit (2) including an impeller (18) which is rotatable about an axis of rotation to convey blood from a blood flow inlet (19) to a blood flow outlet (20) of the pump unit (2), wherein the pump  
10 unit (2) is preferably an expandable pump unit with the impeller (18) being coupled to a flexible drive shaft (16) which extends through the lumen (12) of the elongate tubular portion (11) of the catheter (1), and wherein the drive unit (4) is disposed in the at least one cavity (13) of a handle portion (3) which is another one of the at least one connected device (230) and which is coupled to the flexible drive shaft (16) so as to  
15 cause rotation of the impeller (18).

9. A method of preparing a catheter (1) for use in a patient, the catheter (1) comprising an elongate tubular portion (11) and a at least one connected device (230), the elongate tubular portion (11) being configured to be inserted into a patient's blood vessel and having a proximal end (21) and a distal end (22) and a lumen (12) extending  
20 from the proximal end (21) to the distal end (22), each of the at least one connected device (230) connected to the elongate tubular portion (11) and having at least one cavity (13), wherein the at least one cavity (13) is in fluid communication with the lumen (12) of the elongate tubular portion (11),

the method comprising the steps of:

- 25 - supplying a fluid (30) into at least one of (a) the at least one cavity (13) of at least one of the at least one connected device (230) and (b) the lumen (12) of the elongate tubular portion (11) to purge at least one of the at least one cavity (13) and the lumen (12);
- detecting an orientation of at least one of the elongate tubular portion (11) and the  
30 at least one connected device (230).

10. The method of claim 9, further comprising determining whether the detected orientation matches an orientation in which air is releasable from the cavity (13).
11. The method of claim 9 or 10, in which a difference between the detected orientation and a predetermined orientation is computed to guide a user to change the orientation in order to approach the predetermined orientation.
12. The method of any one of claims 9 to 11, further comprising displaying at least one of: a matching indicator representing the matching of a detected orientation with an orientation in which air is releasable from the cavity (13), the detected orientation, and a representation indicating a difference between the detected orientation and the predetermined orientation.
13. The method of claim 11 or 12, wherein the predetermined orientation is a vertical orientation or a conical range around a vertical axis defined by a predetermined angle.
14. The method of any one claims 11 to 13, wherein the fluid supply is activated, when the detected orientation matches the predetermined orientation, and the fluid supply is deactivated, when the detected orientation differs from the predetermined orientation.
15. The method of any one of claims 9 to 14, further comprising measuring a volume of the supplied fluid (30).
16. The method of any one of claims 9 to 15, wherein the orientation is detected by means of at least one sensor (15), wherein the at least one sensor (15) includes at least one of a gravity sensor, an accelerometer and a gyroscope, wherein the at least one sensor (15) is preferably arranged in at least one of a handle portion (3) and a pump unit (2) and the elongate tubular portion (11), wherein the handle portion (3) is one of the at least one connected device (230) and the pump unit (2) is another one of the at least one connected device (230), wherein the sensor preferably includes a camera that is preferably arranged outside of the handle portion (3) and the pump unit (2) and the elongate tubular portion (11).