CLAIMS

1. A breathing assistance apparatus comprising:

a flow generator configured to generate a flow of gases,

a humidifier configured to be pneumatically connected to the flow generator and to humidify the flow of gases,

wherein the apparatus is configured to be connected to a conduit that conveys the flow of gases,

wherein the apparatus is configured to operate in at least one therapy mode and at least one non-therapy mode, wherein when operating in the at least one therapy mode therapy is being provided to a user, and when operating in the at least one non-therapy mode, no therapy is being provided to the user,

wherein the apparatus is configured to collect and store data, the data comprising therapy data collected during operation in the at least one therapy mode and/or apparatus data,

wherein after a predetermined time operating in the at least one non-therapy mode, the apparatus is configured to:

a) transmit the data to a device, or

b) receive a software package from a or the device, or

c) receive therapy parameters from a or the device, or

d) update parameters of the apparatus, or

e) any combination of a) - d).

2. The breathing assistance apparatus of claim 1, wherein the at least one therapy mode comprises:

a) a Continuous Positive Airway Pressure (CPAP) mode,

b) a Bubble Continuous Positive Airway Pressure (BCPAP) mode,

c) a Nasal High Flow (NHF) mode,

d) a Bilevel mode

e) any combination of a)-d).

3. The breathing assistance apparatus of claim 1 or claim 2, wherein the apparatus is configured to automatically operate in the at least one non-therapy mode after completion of the at least one therapy mode.

4. The breathing assistance apparatus of any one of claims 1 to 3, wherein the apparatus is configured to enter the at least one non-therapy mode after receiving an end of therapy command, wherein the end of therapy command is generated:

a) via an input from a user interface,

b) by detection that the patient interface has been removed from the user

c) by detection that the patient interface has been removed from the user for a predetermined amount of time

d) any combination of a)-c).

5. The breathing assistance apparatus of any one of claims 1 to 4, wherein when the apparatus is operating in the at least one non-therapy mode, the flow generator is activated and is generating the flow of gases and is providing the flow of gases at:

a flow rate less than a therapy flow rate of the flow of gases provided during a therapy mode and/or,

a predetermined flow rate.

6. The breathing assistance apparatus of any one of claims 1 to 5, wherein the at least one non-therapy mode comprises a drying mode configured to dry the conduit and to evaporate remaining condensate in the apparatus and/or patient breathing conduit and/or patient interface, and

wherein when the apparatus is operating in the drying mode: a heater of the conduit is controlled while the flow generator provides gases at a predetermined flow rate and/or a heater of the humidifier is controlled to a predetermined value, or the heater plate is deactivated during the drying mode and/or the heater of the conduit is controlled to a predetermined temperature at the end of the conduit or controlled to a predetermined duty cycle, or to a predetermined voltage, or to a predetermined current or to a predetermined power.

7. The breathing assistance apparatus of claim 6, wherein the predetermined value is a predetermined power, and the predetermined power is less than 5% or less than 10% of a maximum power provided to the heater plate.

8. The breathing assistance apparatus of claim 6 or claim 7, wherein the predetermined temperature is greater than 45 degrees Celsius.

9. The breathing assistance apparatus of any one of claims 6 to 8, wherein the drying mode is configured to be operated for 20 minutes to 120 minutes, or 90 minutes.

10. The breathing assistance apparatus of any one of claims 6 to 9, wherein the drying mode comprises controlling the flow generator to provide a predetermined flow generator output, wherein the flow generator output is a motor speed of 1000RPM to 3000RPM or less than 2000RPM, and/or

wherein the drying mode further comprises controlling the flow generator to provide a predetermined flow rate, wherein the predetermined flow rate is 5 litres/minute to 20 litres/minute.

11. The breathing assistance apparatus of any one of claims 1 to 10, wherein the non-therapy mode is a warm up mode, wherein the apparatus operates in the warm up mode when the apparatus is powered on.

12. The breathing assistance apparatus of claim 11, wherein the warm up mode comprises controlling a heater of the conduit to control a temperature at the end of the conduit to a desired temperature,

wherein the desired temperature at the end of the conduit is based on one or more therapy parameters of the apparatus and/or is a predetermined temperature,

wherein the one or more therapy parameters are:

a) a therapy chamber outlet temperature,
b) a therapy dew point temperature,
c) a therapy humidity, and/or
d) a therapy temperature at the end of the conduit
e) any combination of a)-d).

13. The breathing assistance apparatus of claim 12, wherein the therapy dew point temperature is at the chamber outlet or at the end of the conduit.

14. The breathing assistance apparatus of claim 12 or 13, wherein the therapy humidity is at the chamber outlet or at the end of the conduit.

15. The breathing assistance apparatus of any one of claims 10 to 14, wherein the warm up mode comprises deactivating the flow generator and/or controlling a heater of the humidifier to a predetermined temperature, to a predetermined duty cycle, or to a predetermined voltage, or to a predetermined current, or to a predetermined power.

16. The breathing assistance apparatus of any one of claims 1 to 15, wherein the non-therapy mode is a disinfection mode.

17. The breathing assistance apparatus of claim 16, wherein in the disinfection mode, the apparatus is configured to be connected to a disinfection conduit.

18. The breathing assistance apparatus of claim 17, wherein in the disinfection mode a heater of the disinfection conduit is controlled so that the flow of gases in the disinfection conduit reaches a predetermined temperature,

wherein the predetermined temperature is 50 degrees Celsius to 100 degrees Celsius, or 60 degrees Celsius to 90 degrees Celsius.

19. The breathing assistance apparatus of claim 17 or claim 18, wherein the disinfection conduit comprises a temperature sensor.

20. The breathing assistance apparatus of any one of claims 15 to 19, wherein the disinfection mode comprises controlling the flow generator to provide a predetermined flow rate, wherein the predetermined flow rate is 10 litres/minute to 20 litres/minute.

21. The breathing assistance apparatus of any one of claims 1 to 20, wherein the therapy data comprises data relating to the user and/or therapy provided to the user,

wherein the therapy data comprises:

a) an oxygen saturation, SpO2, of the user,
b) a respiratory rate of the user,
c) a humidity, or dew point, of the gases provided to the user,
d) a flow rate of the gases provided to the user,
e) a tidal volume of the user,
f) a minute ventilation of the user,
g) usage data of the apparatus,
h) answers to one of more questions provided to a user,
i) a therapy report,
j) the results of a health enquiry,
k) any combination of a)-j).

22. The breathing assistance apparatus of any one of claims 1 to 21, wherein the apparatus comprises one or more sensors configured to determine the therapy data,

wherein when the apparatus is operating in the at least one non-therapy mode the user is presented with one or more questions, and provides answers to these questions via at least one user interface, and wherein the questions and/or answers to the questions form part of the therapy data,

wherein the apparatus is configured to receive a sensor output from the one or more sensors, wherein the therapy data is based on the sensor output from one or more sensors.

23. The breathing assistance apparatus of any one of claims 1 to 22, wherein the therapy data comprises data from at least one historic therapy mode, and/or from at least one therapy mode which has not previously been transmitted to the device.

24. The breathing assistance apparatus of any one of claims 1 to 23, wherein the data is transmitted to the device even if the apparatus has not operated in at least one therapy mode.

25. The breathing assistance apparatus of any one of claims 1 to 24, wherein the data is transmitted to the device after a predetermined period of time has elapsed since a last transmission of data to the device, wherein the device is:

a) a server
b) a local device
c) a remote device
d) any combination of a)-c)

26. The breathing assistance apparatus of any one of claims 1 to 25, wherein the user is presented with a visual indicator and/or an audio indicator while the data is being transmitted to the device, and/or wherein the user is presented with a visual indicator and/or an audio indicator if the user attempts to power off the apparatus when the data is being transmitted to the device.

27. The breathing assistance apparatus of any one of claims 1 to 26, wherein after receiving the software package, the apparatus applies the software package to the apparatus, wherein after receiving the therapy parameters from a or the device, the apparatus updates the therapy parameters of the apparatus.

28. The breathing assistance apparatus of any one of claims 1 to 27, wherein the apparatus only receives the software package and/or the therapy parameters if they are an update to a current software package, and/or a current therapy parameter.