

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A device for monitoring a plurality of physiological characteristics of a patient including:
 - 5 a first biosensor layer including a biodata collection element for sensing the physiological characteristics; and
 - an adhesive layer for maintaining contact between the biosensor layer and the skin surface of the patient.
- 10 2. A device according to claim 1, wherein the biodata collection element includes two or more sensors responsive to different physiological inputs.
3. A device according to claim 2, wherein the biodata collection element includes four to eight sensors responsive to different physiological inputs.
- 15 4. A device according to any one of claims 1 to 3, wherein the device is powered remotely.
5. A device according to claim 4, wherein the device is powered by connection to a Wi-Fi, Bluetooth, cellular or low-power wide-area network power source.
- 20 6. A device according to claim 4 or 5, wherein the device includes an electromagnetic radiation receiver for receiving electromagnetic radiation and circuit for extracting power for the device from the received electromagnetic radiation.
- 25 7. A device according to claim 6, wherein the electromagnetic radiation is received from a Wi-Fi, Bluetooth, cellular or low-power wide-area network.
8. A device according to claim 7, wherein the cellular network is a 4G, 5G or 6G network.
- 30 9. A device according to any one of claims 2 to 8, wherein the sensors are activated and deactivated remotely.
- 35 10. A device according to claim 9, wherein the device includes a receiver for receiving a signal for controlling a circuit to activate and/or deactivate the sensors.

11. A device according to any one of claims 2 to 10, wherein the physiological inputs include heart rate, blood pressure, pulse, SpO2, VO2 max, movement time, rest time, lay time, body temperature, electrical activity of the heart (ECG), measurement
5 of wound recovery factors, measurement of skin surface stress factors, measurement of blood sugar levels, audio output and/or the geographic location of the patient.
12. A device according to any one of claims 2 to 11, wherein said physiological inputs
10 are signals or stimuli presented by the patient which are determinative of a mental health characteristic.
13. A device according to any one of claims 2 to 12 wherein the physiological inputs are recorded by the biodata collection element.
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14. A device according to any one of claims 2 to 13 wherein the device includes a radio frequency transmitter.
15. A device according to any one of claims 2 to 14, wherein the recorded physiological
20 inputs are transferred to a database.
16. A device according to claim 15, wherein the recorded physiological inputs are transferred to a database via Wi-Fi, Bluetooth, cellular or low-power wide-area network connection.
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17. A device according to claim 16, wherein the cellular network is a 4G, 5G or 6G cellular network.
18. A device according to claims 15 to 17, wherein the database is on a remote server.
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19. A device according to claims 18, wherein the remote server includes a dedicated server or a virtual server.
20. A device according to any one of claims 1 to 19, wherein the device includes a
35 protective outer layer.

21. A device according to any one of claims 1 to 20, wherein the device includes a machine readable tag for assigning identification details of the patient to the device.
22. A device according to claim 21, wherein the machine readable tag is a two dimensional barcode.
23. A device according to claim 22, wherein the two dimensional barcode is a quick response (QR) barcode.
24. A device according to any one of claims 1 to 23, wherein the device is formed from flexible materials.
25. A device according to any one of claims 1 to 24, wherein the adhesive layer is resistant to damage from sweat and/or water.
26. A device according to any one of claims 1 to 25, wherein the adhesive layer is selected to resist causing irritation or damage to the patient.
27. A device according to claims 25 and 26, wherein the adhesive layer includes an adhesive selected to minimise irritation or damage to the skin of the patient, whilst maintaining functional contact with the skin for an extended period.
28. A device according to any one of claims 1 to 27, wherein the adhesive layer maintains contact with the skin surface of the user for between approximately 1 to 30 days.
29. A device according to claim 28, wherein the adhesive layer maintains contact with the skin surface of the user for between approximately 1 to 14 days.
30. A device according to claim 29, wherein the adhesive layer maintains contact skin surface of the user for between approximately 1 to 10 days.
31. A device according to any one of claims 1 to 30, wherein the device includes a visual means for indicating the status of the device.

32. A device according to claim 31, wherein the visual means includes a colour change indicator.
33. A device according to claim 31 or 32, wherein the status of the device is selected
5 from activated, deactivated, idle and due for replacement.
34. A method for monitoring the physiological characteristics of a patient including:
applying to the patient a device for sensing a plurality of physiological inputs,
the device including:
10 a first biosensor layer including a biodata collection element; and
an adhesive layer;
wherein the adhesive layer provides a means for maintaining contact
between the biosensor layer and the skin surface of the patient; and
wherein upon activation the device senses one or more physiological inputs
15 from the patient.
35. A method for monitoring the physiological characteristics of a patient including:
applying to the patient two or more devices for sensing a plurality of
physiological inputs, wherein each device includes:
20 a first biosensor layer including a biodata collection element; and
an adhesive layer;
wherein the adhesive layer provides a means for maintaining contact
between the biosensor layer and the skin surface of the patient; and
wherein upon activation each device senses one or more physiological
25 inputs from the patient.
36. A method according to claim 35, wherein said method includes applying to the
patient between one to five devices for sensing a plurality of physiological inputs.
- 30 37. A method according to claim 36, wherein said method includes applying to the
patient two to three devices for sensing a plurality of physiological inputs.
38. A method according to any one of claims 35 to 37, wherein said method includes
applying to the patient at least one device for sensing a plurality of physiological
35 inputs, wherein said inputs are signals or stimuli presented by the patient which are
determinative of a mental health characteristic.

39. A method according to any one of claims 33 to 38, wherein the biodata collection element includes two or more sensors responsive to different physiological inputs.
- 5 40. A method according to claim 39, wherein the biodata collection element includes four to eight sensors responsive to different physiological inputs.
41. A method according to any one of claims 34 to 40, wherein the method includes remotely powering the device.
- 10 42. A method according to claim 41, wherein method includes remotely powering the device by connection to a Wi-Fi, Bluetooth, cellular or low-power wide-area network power source.
- 15 43. A method according to claim 42, wherein the cellular network is a 4G, 5G or 6G cellular network.
44. A method according to any one of claims 34 to 43, wherein the recorded physiological inputs are selected from heart rate, blood pressure, pulse, SpO2, VO2
20 max, movement time, rest time, lay time, body temperature, electrical activity of the heart (ECG), measurement of wound recovery factors, measurement of skin surface stress factors, measurement of blood sugar levels, audio output and/or the geographic location of the patient.
- 25 45. A method according to any one of claims 34 to 44, wherein the recorded physiological inputs are transferred to a database.
46. A method according to claim 45, wherein the recorded physiological inputs are transferred to a database by a Wi-Fi, Bluetooth, cellular or low-power wide-area
30 network connection.
47. A method according to claim 46, wherein the cellular network is a 4G, 5G or 6G cellular network.
- 35 48. A method according to claim 45 or 47, wherein the database is stored on a remote server.

49. A method according to any one of claims 45 to 48, wherein method includes notifying a secondary device of the recorded physiological inputs.
- 5 50. A method according to any one of claims 34 to 49, wherein the method includes determining whether a change in the recorded physiological input(s) reaches a predefined threshold.
- 10 51. A method according to claim 50, wherein when the threshold is reached a notification is sent to a secondary device which functions to dynamically calculate the risk associated with the patient in respect of a particular disease or indication.
- 15 52. A method according to any one of claims 44 to 51, wherein the secondary device is selected from a computer, smart phone, tablet, touch screen device or any other suitable "smart device".
- 20 53. A method according to any one of claims 44 to 52, wherein the secondary device includes a data module configured to receive, monitor and/or analyse the physiological inputs recorded by the first biosensor layer.
54. A method according to claim 53, wherein the data module is configured to provide an output of the recorded physiological inputs.
- 25 55. A method according to claim 54, wherein the output includes a recording of the physiological inputs at pre-determined times.
56. A method according to claims 54 and 55, wherein the output includes recommendation(s) for treatment and/or intervention in respect of the patient.
- 30 57. A system for monitoring the physiological characteristics of a patient including:
a device for recording a plurality of physiological inputs, the device including:
a first biosensor layer including a biodata collection element for
sensing the physiological characteristics; and
an adhesive layer for maintaining contact between the biosensor
35 layer and the skin surface of the patient; and

a server for receiving the recorded physiological inputs from the device and for and storing the received physiological inputs.

58. A system according to claim 57, wherein said system includes between one to five devices for sensing a plurality of physiological inputs.
59. A system according to claim 58, wherein said system includes two to three devices for sensing a plurality of physiological inputs.
60. A system according to any one of claims 57 to 59, wherein said system includes at least one device for sensing a plurality of physiological inputs, wherein said inputs are signals or stimuli presented by the patient which are determinative of a mental health characteristic.
61. A system according to any one of claims 57 to 60, wherein the biodata collection element includes two or more sensors responsive to different physiological inputs.
62. A system according to claim 61, wherein the biodata collection element includes four to eight sensors responsive to different physiological inputs.
63. A system according to claims 57 to 62, wherein the system includes a wireless network.
64. A system according to claim 63, wherein the device is powered remotely by the wireless network. .
65. A system according to claim 64, wherein the wireless network is a Wi-Fi, Bluetooth, cellular or low-power wide-area network.
66. A system according to any one of claims 57 to 65, wherein the recorded physiological inputs include heart rate, blood pressure, pulse, SpO2, VO2 max, movement time, rest time, lay time, body temperature, electrical activity of the heart (ECG), measurement of wound recovery factors, measurement of skin surface stress factors, measurement of blood sugar levels, audio output and/or the geographic location of the patient.

67. A system according to any one of claims 57 to 66, wherein the recorded physiological inputs are transferred to a database.
68. A system according to any one of claims 57 to 67, wherein the device is configured to transfer the recorded physiological inputs to a database by a Wi-Fi, Bluetooth, cellular or low-power wide-area network connection.
69. A system according to claim 68, wherein the cellular network is a 4G, 5G or 6G cellular network.
70. A system according to any one of claims 67 to 69, wherein the recorded physiological inputs are stored in a database.
71. A system according to any one of claims 57 to 70, wherein the database is located on a remote server.
72. A system according to claims 71, wherein the remote server includes a dedicated server or a virtual server.
73. A system according to any one of claims 57 to 72, wherein the system includes a means for notifying the secondary device of the recorded physiological inputs.
74. A system according to any one of claims 57 to 73, wherein the server is configured to detect when a change in the recorded physiological input(s) reaches a predefined threshold.
75. A system according to claim 74, wherein when the threshold is reached, a notification is sent to the secondary device.
76. A system according to any one of claims 57 to 75, wherein the secondary device is selected from a computer, smart phone, tablet, touch screen device or any other suitable "smart device".
77. A system according to any one of claims 57 to 76, wherein the secondary device includes a data module configured to receive, monitor and/or analyse the recorded physiological inputs and dynamically calculate the risk associated with the patient in

respect of a particular disease or indication, and where necessary, respond appropriately.

- 5 78. A system according to claim 77, wherein the data module is configured to provide an output of the recorded physiological inputs.
79. A system according to claim 78, wherein the output includes a recording of the physiological inputs over pre-determined times.
- 10 80. A system according to any one of claims 78 and 79, wherein the output includes recommendation(s) for treatment and/or intervention in respect of the patient.
81. A system according to any one of claims 77 to 80, wherein the data module provides a means for identifying changes in the recorded physiological inputs.
- 15 82. A system according to any one of claims 57 to 81, wherein the system includes a means to record the patient interaction with a tertiary device.