CLAIMS

1. A method of forming a pipeline through fusion, the method comprising the acts of**:** arranging a first component and a second component in contact with one another, one or both of the components being heated under the control of a control unit, the control unit being connected to a power supply, the first component and second component being provided in contact with one another with at least one of the first or second component heated, the first and second component being allowed to cool thereby joining the first component to the second component, wherein one or more pieces of information relating to the fusion are conveyed from the control unit to a different location, by a wireless transmitter ~~and/or to the control unit from a different location by a wireless transmitter, the different location being one or more monitoring stations~~**, in which the piece of information is one or more of: the person performing the fusion, the legal entity performing the fusion, the fitting manufacturer, the individual identity of the fusion control unit, the fusion control unit manufacturer; and wherein the different location compares one or more of the process conditions in the form of the one or more pieces of information against one or more predetermined conditions, and where a problem occurs remedial action is taken on the previous and/or present fusion operation in respect of the problem**.

2. A method of fusion, preferably electrofusion, the method comprising the acts of arranging a first component and a second component in contact with one another, connecting the first component to a control unit, the control unit being connected to a power supply, passing a current through the first component to heat at least the first component under the control of the control unit, allowing the first component to cool thereby joining the first component to the second component, wherein one or more pieces of information relating to the fusion are conveyed from the control unit to a different location by a wireless transmitter, the different location being one or more remote monitoring stations**, in which the piece of information is one or more of: the person performing the fusion, the legal entity performing the fusion, the fitting manufacturer, the individual identity of the fusion control unit, the fusion control unit manufacturer; and wherein the different location compares one or more of the process conditions in the form of the one or more pieces of information against one or more predetermined conditions, and where a problem occurs remedial action is taken on the previous and/or present fusion operation in respect of the problem**.

3. A method according to claim 1 or claim 2 in which the piece of information is **further** one or more of, the duration of power application to the first component, the voltage applied, the voltage profile applied, the current applied, the current profile applied, ~~the person performing the fusion, the legal entity performing the fusion,~~ the fitting type, the individual identity of the fitting, ~~the fitting manufacturer,~~ the fusion control unit type, ~~the individual identity of the fusion control unit, the fusion control unit manufacturer,~~ the time of the fusion, the date of the fusion.

4. A method according to any preceding claim in which one or more of the different locations monitors the extent of progress and/or rate of progress of a succession of electrofusion operations and/or one or more process conditions used.

~~5. A method according to any preceding claim in which one or more of the different locations compares one or more of the processing conditions against one or more predetermined conditions.~~

~~6. A method according to claim 5 in which the deviation of one or more of the process conditions from the predetermined condition results in further action, the further action potentially comprising notification of the discrepancy to one or more parties.~~

~~7.~~ **5.** A method according to any preceding claim in which one or more of the different locations receives information from a plurality of fusion operation locations.

~~8.~~ **6.** A method according to any preceding claim in which the wireless transmitter is an integral part of the control unit or provided as an integral part of another element of the fusion apparatus.

~~9.~~ **7.** A method according to any preceding claim in which the wireless transmitter is attached to the apparatus during transmission and the wireless transmitter is detached from the apparatus at one or more other times.

~~10.~~ **8.** A method according to any preceding claim in which pieces of information from two or more operations are transmitted in a single transmission.

~~11.~~ **9.** A method according to any preceding claim in which the method includes comparing the fusion operations which have been reported as performed with cartographic information to give an indication of the approximate location of the operator.

~~12.~~ **10.** A method according to any preceding claim in which the method includes transmitting an access code to use the fusion to the different location.

~~13.~~ **11.** A method according to claim ~~8~~ **10** in which an incorrect access code use is noted and preferably a number of incorrect access codes results in a determination that the apparatus has been stolen and/or is being used by an unauthorised operator.

~~14.~~ **12.** A method according to any preceding claim in which the pieces of information include one or more visual images.

~~15.~~ **13.** A method of providing information to an fusion, preferably electrofusion, control unit, the control unit receiving a current from a power source and applying the current to a first component to heat at least the first component, in use, the first component cooling thereby joining the first component to a second component, the method including sourcing the information at a different location to the location of the control unit and conveying one or more pieces of the information to the control unit by a wireless receiver, the different location being one or more monitoring stations**, in which the piece of information is one or more of: the person performing the fusion, the legal entity performing the fusion, the fitting manufacturer, the individual identity of the fusion control unit, the fusion control unit manufacturer; and wherein The different location compares one or more of the process conditions in the form of the one or more pieces of information against one or more predetermined conditions, and where a problem occurs remedial action is taken on the previous and/or present fusion operation in respect of the problem**.

~~16.~~ **14.** A method according to claim 1 or claim 2 in which the information from the different location is audio information such speech.

~~17.~~ **15.** A method according to claim ~~16~~ **14** in which the speech is one or more of instructions on one of more of the following, the location of the fusion operation to perform next, the conditions to use in the next fusion operation, modifications or remedial action to the previous and/or present fusion

operation, the type of fitting to use, modifications to the pipeline (including direction, configuration, size and orientation), modifications to the fittings to use, modifications to the pipes to use.

~~18.~~ **16.** A method according to claim 1 or claim 2 or claim ~~16~~ **14** in which the information is a signal to the control unit and/or power source to disable itself.

~~19.~~ **17.** A method according to claim 1 or claim 2 or claim ~~16~~ **14** in which the information is instructions to perform one or more diagnostic tests and/or how to perform one or more diagnostic tests and / or instructions to perform one or more calibration actions and/or how to perform one or more calibration actions and / or the one or more changes, replacements or additions to the control software or other software of the system.

~~20. Apparatus for performing an fusion, preferably an electrofusion, operation in which a current is applied to a first component to heat at least the first component, the first component upon cooling joining the first component to a second component, the apparatus including a power source, a control unit and electrical conductors for providing current to at least one of the components, preferably the first component, the apparatus also including a wireless telecommunication device which can communicate with one or more monitoring stations.~~

~~21. A fusion, preferably an electrofusion, control unit for controlling a fusion operation in which a current is applied to a first component to heat at least the first component, the first component upon cooling joining the first component to a second component, the control unit including an input connection for connecting to a power source and an output connection for connecting to electrical conductors for providing current to the first component, the control unit also including a wireless telecommunication device which can communicate with one or more monitoring stations.~~

18. A method of forming a pipeline through fusion, the method comprising the acts of arranging a first component and a second component in contact with one another, one or both of the components being heated under the control of a control unit, the control unit being connected to a power supply, the first component and second component being provided in contact with one another with at least one of the first or second component heated, the first and second component being allowed to cool thereby joining the first component to the second component, wherein one or more pieces of information relating to process conditions of the fusion are conveyed from the control unit to a different location, by a wireless transmitter, wherein the different location compares one or more of the process conditions against one or more predetermined conditions, and where a problem occurs remedial action is taken before the pipeline is buried.

19. A method of fusion, preferably electrofusion, the method comprising the acts of arranging a first component and a second component in contact with one another, connecting the first component to a control unit, the control unit being connected to a power supply, passing a current through the first component to heat at least the first component under the control of the control unit, allowing the first component to cool thereby joining the first component to the second component, wherein one or more pieces of information relating to process conditions of the fusion are conveyed from the control unit to a different location by a wireless transmitter the different location being one or more remote monitoring stations, wherein the different location

compares one or more of the process conditions against one or more predetermined conditions, and where a problem occurs remedial action is taken before the pipeline is buried.

20. A method according to claim 18 or claim 19 in which the piece of information is one or more of, the duration of power application to the first component, the voltage applied, the voltage profile applied, the current applied, the current profile applied, the person performing the fusion, the legal entity performing the fusion, the fitting type, the individual identity of the fitting, the fitting manufacturer, the fusion control unit type, the individual identity of the fusion control unit, the fusion control unit manufacturer, the time of the fusion, the date of the fusion.

21. A method according to any of claims 18 to 20 in which one or more of the different locations monitors the extent of progress and/or rate of progress of a succession of electrofusion operations and/or one or more process conditions used.

22. A method according to any of claims 18 to 21 in which one or more of the different locations receives information from a plurality of fusion operation locations.

23. A method according to any of claims 18 to 22 in which the wireless transmitter is an integral part of the control unit or provided as an integral part of another element of the fusion apparatus.

24. A method according to any of claims 18 to 23 in which the wireless transmitter is attached to the apparatus during transmission and the wireless transmitter is detached from the apparatus at one or more other times.

25. A method according to any of claims 18 to 24 in which pieces of information from two or more operations are transmitted in a single transmission.

26. A method according to any of claims 18 to 25 in which the method includes comparing the fusion operations which have been reported as performed with cartographic information to give an indication of the approximate location of the operator.

27. A method according to any of claims 18 to 26 in which the method includes transmitting an access code to use the fusion to the different location.

28. A method according to claim 27 in which an incorrect access code use is noted and preferably a number of incorrect access codes results in a determination that the apparatus has been stolen and/or is being used by an unauthorised operator.

29. A method according to any of claims 18 to 28 in which the pieces of information include one or more visual images.

30. A method of providing information to an fusion, preferably electrofusion, control unit, the control unit receiving a current from a power source and applying the current to a first component to heat at least the first component, in use, the first component cooling thereby joining the first component to a second component, the method including sourcing the information at a different location to the location of the control unit and conveying one or more pieces of the information relating to process conditions of the fusion to the control unit by a wireless receiver, the different location being one or more monitoring stations, wherein the different location compares one or more of the process conditions against one or more predetermined conditions, and where a

problem occurs remedial action is taken before the pipeline is buried.

31. A method according to any of claims 18 to 30 in which the information from the different location is audio information such speech.

32. A method according to claim 31 in which the speech is one or more of instructions on one of more of the following, the location of the fusion operation to perform next, the conditions to use in the next fusion operation, modifications or remedial action to the previous and/or present fusion operation, the type of fitting to use, modifications to the pipeline (including direction, configuration, size and orientation), modifications to the fittings to use, modifications to the pipes to use.

33. A method according to any of claims 18 to 32 in which the information is a signal to the control unit and/or power source to disable itself

34. A method according to any of claims 18 to 33 in which the information is instructions to perform one or more diagnostic tests and/or how to perform one or more diagnostic tests and / or instructions to perform one or more calibration actions and/or how to perform one or more calibration actions and / or the one or more changes, replacements or additions to the control software or other software of the system.

35. A method of forming a pipeline through fusion, the method comprising the acts of arranging a first component and a second component in contact with one another, one or both of the components being heated under the control of a control unit, the control unit being connected to a power supply, the first component and second component being provided in contact with one another with at least one of the first or second component heated, the first and second component being allowed to cool thereby joining the first component to the second component, wherein one or more pieces of information relating to the fusion are conveyed from the control unit to a different location, by a wireless transmitter and to the control unit from a different location, by a wireless transmitter, the method further including transmitting an access code to use the fusion to the different location, wherein incorrect access code use is noted and a number of incorrect access code uses result in a determination that the apparatus has been stolen and/or is being used by an unauthorised operator, the method further including transmission of a signal to the control unit and/or power source to disable itself.

36. A method of fusion, preferably electrofusion, the method comprising the acts of arranging a first component and a second component in contact with one another, connecting the first component to a control unit, the control unit being connected to a power supply, passing a current through the first component to heat at least the first component under the control of the control unit, allowing the first component to cool thereby joining the first component to the second component, wherein one or more pieces of information relating to the fusion are conveyed from the control unit to a different location by a wireless transmitter, the different location being one or more remote monitoring stations, and being conveyed to the control unit from a different location by a wireless transmitter, the method further including transmitting an access code to use the fusion to the different location, wherein incorrect access code use is noted and a number of incorrect access code uses result in a determination that the apparatus has been stolen and/or is being used by an unauthorised operator, the method further including transmission of a signal to the control unit and/or power source to disable itself.

37. A method according to claim 35 or claim 36 in which the piece of information is one or more of, the duration of power application to the first component, the voltage applied, the voltage profile applied, the current applied, the current profile applied, the person performing the fusion, the legal entity performing the fusion, the fitting type, the individual identity of the fitting, the fitting manufacturer, the fusion control unit type, the individual identity of the fusion control unit, the fusion control unit manufacturer, the time of the fusion, the date of the fusion.

38. A method according to any of claims 35 to 37 in which one or more of the different locations monitors the extent of progress and/or rate of progress of a succession of electrofusion operations and / or one or more of the process conditions used.

39. A method according to any of claims 35 to 38 in which one or more of the different locations compares one or more of the process conditions against one or more predetermined conditions.

40. A method according to claim 39 in which deviation of one or more of the process conditions from the predetermined condition results in further action, the farther action potentially comprising notification of the discrepancy to one or more parties.

41. A method according to any of claims 35 to 40 in which one or more of the different locations receives information from a plurality of fusion operation locations.

42. A method according to any of claims 35 to 41 in which the wireless transmitter is an integral part of the control unit or provided as an integral part of another element of the fusion apparatus.

43. A method according to any of claims 35 to 42 in which the wireless transmitter is attached to the apparatus during transmission and the wireless transmitter is detached from the apparatus at one or more other times.

44. A method according to any of claims 35 to 43 in which pieces of information from two or more operations are transmitted in a single transmission.

45. A method according to any of claims 35 to 44 in which the method includes comparing the fusion operations which have been reported as performed with cartographic information to give an indication of the approximate location of the operator.

46. A method according to any of claims 35 to 45 in which the pieces of information include one or more visual images.

47. A method of providing information to an fusion, preferably electrofusion, control unit, the control unit receiving a current from a power source and applying the current to a first component to heat at least the first component, in use, the first component cooling thereby joining the first component to a second component, the method including sourcing the information at a different location to the location of the control unit and conveying one or more pieces of the information to the control unit by a wireless receiver, the different location being one or more monitoring stations, the method further including transmitting an access code to use the fusion to the different location, wherein incorrect access code use is noted and a number of incorrect access code uses result in a determination that the apparatus has been stolen and/or is being used by an

unauthorised operator, the method further including transmission of a signal to the control unit and/or power source to disable itself.

48. A method according to any of claims 35 to 47 in which the information from the different location is audio information such speech.

49. A method according to claim 48 in which the speech is one or more of instructions on one of more of the following, the location of the fusion operation to perform next, the conditions to use in the next fusion operation, modifications or remedial action to the previous and/or present fusion operation, the type of fitting to use, modifications to the pipeline (including direction, configuration, size and orientation), modifications to the fittings to use, modifications to the pipes to use.

50. A method according to any of claims 35 to 49 in which the information is instructions to perform one or more diagnostic tests and/or how to perform one or more diagnostic tests and / or instructions to perform one or more calibration actions and/or how to perform one or more calibration actions and / or the one or more changes, replacements or additions to the control software or other software of the system.