CLAIMS:

1. A multi-interface unit invigoration system for providing invigoration and/or cooling via continuous or noncontinuous controlled modes of operation, the system comprising:

either concentric or non-concentric multiple interface units, said multiple interface units are programmed to provide gas either to a predefined spot/volume or to multiple spots/volumes, either continuously or by at least one predefined time sequence,

at least one compressed gas source for providing compressed gas to at least one of said multiple interface units, and

a controller,

wherein to ensure effective and well-controlled cooling, the compressed gas is maintained at a predefined temperature, in each of said multiple interface units,

wherein each of said multiple interface units is programmed to receive said compressed gas and to expand said compressed gas continuously or via at least one predefined time sequence to control the temperature of each of said multiple interface units,

whereby the multi-interface unit invigoration system providing invigoration and/or cooling with either continuous or noncontinuous controlled modes of operation.

2. The multi-interface unit invigoration system of claim 1, wherein said multiple interface units are arranged either in parallel or in a consecutive manner, wherein in case said multiple interface units are arranged in a consecutive manner, the compressed gas is transferable from each of said multiple interface units to a consecutive receiving interface unit, thus, gas expansion associated with cooling in each of said multiple interface units leading to gas compression associated with heating in said consecutive receiving interface unit.

3. The multi-interface unit invigoration system of claim 2, wherein in case said multiple interface units are arranged in parallel, gas compression into each of said multiple interface units and/or gas expansion from each of said multiple interface units is either continuous or activated by at least one predefined time sequence.

4. The multi-interface unit invigoration system of claim 1, wherein the temperature of the gas being discharged from each of said multiple interface units is controlled by a mode of operation, either a continuous mode of operation or a non-continuous mode of operation set by at least one predefined time sequence of said gas compression and said gas expansion in each of said multiple interface units , wherein in said non-continuous mode of operation, the gas expansion

and the gas compression take place interchangeably at predefined times in each of said multiple interface units.

5. The multi-interface unit invigoration system of claim 1, wherein each of the multiple interface units comprises a discharge device selected from a moderate controlled quasi-reversible discharge device, a nozzle discharge device, an instantaneous prompt solenoid discharge device, and a turbine.

6. The multi-interface unit invigoration system of claim 1 further comprising a gas enrichment sub-unit (GEU) and/or a purifying gas stream discharge unit for providing a purifying gas stream, wherein said gas enrichment sub-unit (GEU) providing an enriching gas stream connected to at least one gas stream discharged from at least one of said multiple interface units to enrich said at least one gas stream being discharged from the at least one of said multiple interface units, and wherein the purifying gas stream is connected to the enriching gas stream provided to at least one of said multiple interface units to purify said gas stream.

7. The multi-interface unit invigoration system of claim 4, wherein when an expansion phase in one interface unit comes to an end, a consecutive interface unit goes into its expansion phase, while recompression begins in the one interface unit, and when the consecutive interface unit completes its expansion phase, it is recompressed, while the following interface unit goes into its expansion phase.

8. The multi-interface unit invigoration system of claim 1, wherein each one of the interface units operates in a mode selected from light or immediate ventilation mode, ventilation with cooling mode, and aeration mode with or without disinfection.

9. The multi-interface unit invigoration system of claim 1, further comprising an intermediate collection vessel, wherein each of the multiple interface units is drained into said intermediate collection vessel, wherefrom invigorating gas is supplied and/or a pressurized vessel for indirect charging of the multiple interface units, said pressurized vessel is charged with compressed gas via said at least one compressed gas source and is maintained at high pressure, said pressurized vessel is connected to each of the multiple interface units for charging each of

the interface units with compressed gas either continuously or via at least one pre-defined time sequence.

10. The multi-interface unit invigoration system of claim 1, wherein said multiple interface units have multiple volumes and wherein small volume interface unit(s), medium volume interface unit(s), and large volume interface unit(s) are arranged in a successive manner, wherein one of the small volume interface unit(s) is a charging high pressure interface unit, and wherein an expansion phase starts from a high pressure level in the charging high pressure small interface unit and continues successively to a lower pressure level in the large volume interface unit(s).

11. The multi-interface unit invigoration system of claim 10, wherein large volume interface unit(s), medium volume interface unit(s), and small volume interface unit(s) are arranged in a successive manner, wherein one of the large volume interface unit(s) is a charging high pressure interface unit, and wherein an expansion phase starts from a high pressure level in the large charging high pressure interface unit and continues successively to a lower pressure level in the small volume interface unit(s).

12. The multi-interface unit invigoration system of claim 10, wherein said small volume interface unit(s) is situated in said medium volume interface unit(s), and said medium volume interface(s) unit is situated in said large volume interface unit(s) to have a direct heat transfer, to cool each other while the compressed gas in each of said interface units undergoes an expansion phase.

13. The multi-interface unit invigoration system of claim 10, wherein said multi-interface unit invigoration system is a non-concentric multi storage unit, where expansion and cooling occur in each of the interface units due to generation of local Venturi effect due to local variations in the path of the gas stream within each of the interface unit.

14. The multi-interface unit invigoration system of claim 13, wherein a local expansion in each of said interface units is determined by the eccentricity of the non-concentric interface unit.

15. The multi-interface unit invigoration system of claim 14, wherein a flow reversal in each of the interface units and/or a local turbulence of the gas flow, induce temperature reduction.

16. The multi-interface unit invigoration system of claim 15, wherein the gas is accelerated by entering through at least one narrow gap into the non-concentric interface unit, and then, the gas expanding immediately upon exiting the non-concentric interface unit through at least one wide gap.

17. The multi-interface unit invigoration system of claim 1, wherein the multi-interface unit invigoration system is pre-programmed to operate in a continuous mode, providing gas streams at various levels of cooling and cooling capabilities.

18. A multi-interface unit invigoration method comprising:

- providing the multi-interface unit invigoration system of claims 1-17;
- arranging said concentric or non-concentric multiple interface units,
- programming said concentric or non-concentric multiple interface units to provide compressed gas either to a predefined spot/volume or to multiple spots/volumes,
- to ensure effective and well-controlled cooling, maintaining the compressed gas at a predefined temperature, in each of said multiple concentric or non-concentric interface units;
- programming each of said concentric or non-concentric multiple interface units to receive said compressed gas and to expand said compressed gas continuously or via at least one predefined time sequence to control the temperature of each of said concentric or non-concentric multiple interface units.

19. The multi-interface unit invigoration method of claim 18, wherein connecting said concentric or non-concentric multiple interface units in a consecutive manner, so that expansion associated with cooling in one concentric or non-concentric interface unit leading to compression associated with heating in a consecutive concentric or non-concentric interface unit.

20. The multi-interface unit invigoration method of claim 18, wherein inducing a time delay between a compression phase and an expansion phase in each of said concentric or non-concentric multiple interface units for controlling the temperature in each of said multiple consecutive concentric or non-concentric interface units.