Patent Claims

1. A pressure cascade for cooling at least one electronic unit (1, 5) in a combat vehicle (20),
having at least one installation compartment (25) for the electronic unit (1, 5),
having at least one cooling system, and a compartment (18) in which a cooling plant (10) of the cooling system is arranged,
wherein a negative pressure is produced in the compartment (18) of the cooling plant (10) by the cooled air which is transported away from the cooling plant (10),
characterized
in that the cooling plant comprises a hose system (22) which supplies the air cooled by the cooling plant (10) to zones to be cooled in the combat vehicle (20),
in that cooled air is supplied by at least one hose of the hose system (22) to the installation compartments (25), as a result of which a positive pressure arises in the installation compartments (25),
in that an aperture (11) leads from each installation compartment (25) to the compartment (18) of the cooling plant (10), as a result of which the negative pressure acts on the installation compartments (25) and ensures that the air supplied to the cooling plant (10) is transported away.

2. The pressure cascade as claimed in claim 1, **characterized in that** the air supplied to the installation compartments (25) is branched off from the remaining hoses by at least one additional hose (12).

3. The pressure cascade as claimed in claim 2, **characterized in that** the branching is undertaken by a Y-shaped hose piece which is introduced into one of the existing hoses.

4. The pressure cascade as claimed in one of claims 1 to 3, **characterized in that** the hose (12) in the installation compartment (25) has openings (13) via which the cooled air is supplied to the installation compartment (25).

5. The pressure cascade as claimed in one of claims 1 to 4, **characterized in that** the hose in the installation compartment (25) has an at least partially air-permeable sheath (19).

6. The pressure cascade as claimed in one of claims 1 to 5, **characterized in that** the electronic units (1, 5) comprise the drive electronics (1) of a weapon system of the combat vehicle and/or the control electronics (5) of the combat vehicle (20).

7. The pressure cascade as claimed in one of claims 1 to 6, **characterized in that** the electronic units (1, 5) control the drives (2, 4) of a weapon system (16) and/or of a combat turret (14) of the combat vehicle (20).

8. The pressure cascade as claimed in one of claims 1 to 7, **characterized in that** existing sensors in the combat vehicle (20) are likewise cooled as an electronic unit, namely an acceleration sensor (3) and/or a weapon gyroscope (8) and/or a tower gyroscope (9).

9. The pressure cascade as claimed in one of claims 1 to 8, **characterized in that** the electronic unit (1, 5) has cooling fins by means of which improved heat exchange between electronic unit (1, 5) and cooled air is ensured.

10. The pressure cascade as claimed in one of claims 1 to 9, **characterized in that** the cooled air is transported through the hoses by ventilators in the cooling plant (10).

11. The pressure cascade as claimed in one of claims 1 to 10, **characterized in that** the compartment (18) in which the cooling plant is arranged is an equipment compartment (21) and is accessible from outside the combat turret (14).

12. A cooling system for cooling various zones in a combat vehicle (20),
Wherein the combat vehicle (20) is constructed from a chassis (15) and at least one rotatable combat turret (14) and
has a compartment (18) in the combat turret (14),
characterized
in that a pressure cascade as claimed in one of claims 1 to 11 is provided,
in that at least one cooling plant (10) is introduced into the compartment (18), wherein the cooling plant (10) comprises at least one compressor and liquefier unit (10.1) and at least one air treatment apparatus (10.2),

in that a hose system (22) conducts the air cooled by the cooling plant (10) to the zones in the combat vehicle, wherein the hose system (22) consists of a plurality of branched hoses, and

in that the cooling plant (10) produces an air flow which is conducted through the hose system (22) to the zones.

13. The cooling system as claimed in claim 12, **characterized in that** the air treatment apparatus (10.2) is configured in such a manner that it processes even ABC contaminated air so as to be breathable, i.e. air contaminated due to atomic, biological and/or chemical threat.

14. The cooling system as claimed in either of claims 12 and 13, **characterized in that** the zones in the combat vehicle (20) comprise compartments for the operating personnel.

15. The cooling system as claimed in one of claims 12 to 14, **characterized in that** the zones in the combat vehicle (20) comprise installation compartments (25) of electronic units.

16. The cooling system as claimed in one of claims 12 to 15, **characterized in that** a control panel (23) is provided via which the air flow and/or the temperature of the air flow in the hose system (22) can be regulated.

17. The cooling system as claimed in claim 16, **characterized in that** the control panel (23) has means for regulating the air flow, and also optical and/or acoustic indicators.

18. The cooling system as claimed in one of claims 12 to 17, **characterized in that** the hose ends of the hose system (22) likewise have means for regulating (24) the air flow.

19. The cooling system as claimed in one of claims 12 to 18, **characterized in that** the compartment (18) in which the cooling plant is arranged is an equipment compartment (21) and is accessible from outside the combat turret.

20. A combat vehicle (20) comprising a chassis (15) and at least one combat turret (14),
having at least one compartment (18) in the combat turret (14),
characterized
in that a cooling system as claimed in one of claims 12 to 19 is provided.

21. A combat vehicle comprising a chassis (15) and at least one combat turret (14),
having at least one electronic unit (1, 5) which is fitted in an installation compartment (25),
characterized
in that a pressure cascade as claimed in one of claims 1 to 11 is provided.