Claims

1. ~~Surveillance~~Modular surveillance system (1) for an infrastructure and/or for a vehicle, comprising

- at least two sensor modules (2a-2d) configured to collect respective sensor data (U, T, V, A) from respectively associated sensors (3a-3d);
- at least one access module (5, 5a-5d) configured to access the sensor data (U, T, V, A);

~~characterized by~~

- a clock module (4) being configured to provide a common time signal (t) at least to two of the sensor modules (2a-2d); with
- the sensor modules (2a-2d) being configured to provide the sensor data (U, T, V, A) with a time stamp, wherein the time stamp is based on the common time signal (t); and
- the access module (5, 5a-5d) being configured to forward the accessed sensor data (U, T, V, A) by taking into account the time stamp~~.~~,

wherein

the sensor modules (2a-2d) and/or access modules (5, 5a-5d) have a common design so that different kind of sensor data (U, T, V, A) can be handled by different modules (2a-2d, 5, 5a-5d) using the common design enabling simplified measuring of a network load of the system (1), and

the sensor modules (2a-2d) and/or the at least one access module (5, 5a-5d) can be configured during operation of the system (1) to collect and/or access and forward sensor data (U, T, V, A) only with a data rate limited by a predetermined maximum data rate which is preset dynamically in dependence upon the network load of the system (1).

2. System (1) according to claim 1, characterized in that the access module (5, 5a-5d) is configured to forward the sensor data (U, T, V, A) to an output module (6, 6c-6d), in particular an output module (6, 6c-6d) with a monitor and/or a loudspeaker, and/or to another access module (5, 5a-5d) and/or to an analysis module (7, 7a-7c), which is configured to analyze the sensor data (U, T, V, A).

3. System (1) according to any of ~~the preceding claims~~claim 1 or 2, characterized in that the access module (5, 5a-5d) is configured to forward the sensor data (U, T, V, A) of at least two different source modules to the output module (6, 6c-6d) and/or a storage module (8, 8a, 8c) and/or another access module (5, 5a-5d) and/or the analysis module (7, 7a-7c) in a synchronized way, where ~~in particular~~ the source

modules ~~may be~~comprise sensor modules (2a-~~-~~2d) ~~or~~and in particular may also comprise storage modules (8, 8a, 8c) or output modules (6, 6c-6d) or mixtures of said modules.

4. System (1) according to claim 3, characterized in that the access module (5, 5a-5d) is configured to, in order to forward the sensor data (U, T, V, A) of the at least two different source modules in a synchronized way, evaluate respective time lags (Δa-Δd) of the sensor data (U, T, V, A) stemming from the different source modules, and delay forwarding sensor data (U, T, V, A) of at least one source module based on the evaluated time lags (Δa-Δd), in particular based on the maximum time lag evaluated.

5. System (1) according to any of ~~the preceding~~ claims 1 to 4, characterized in that the sensor modules (2a-2d) are of at least two different types, where each type of sensor module (2a-~~-~~2d) is associated with a different type of sensor (3a-3d) and is configured to collect a different type of sensor data (U, T, V, A).

6. System (1) according to claim 5, characterized in that each of the different types of sensor modules (2a-2d) is associated with at least one of the following sensors as respective sensor (3a-3d): camera sensor, multi-camera sensor, microphone sensor, multi-~~-~~microphone sensor, temperature sensor, fire alarm sensor, smoke sensor, voltage sensor, power consumption sensor, door sensor, emergency button sensor, escalator load sensor, vehicle load sensor, electronic current sensor, flow rate sensor, pressure sensor, rotational and/or translational speed sensor, rotational and/or translational acceleration sensor, vibration sensor, motion detection sensor, radar sensor, Hall sensor, ultrasonic sensor, GPS sensor, load cell sensor, light barrier sensor.

7. System (1) according to any of ~~the preceding~~ claims 1 to 6, characterized in that the sensor modules (2a-2d) and/or access modules (5, 5a-5d) ~~have unified interfaces and/or~~ are configured to be ~~exchangeable~~replaceable, in particular during the operation of the system (1).

8. System (1) according to any of ~~the preceding~~ claims 1 to 7, characterized by at least one storage module (8, 8a, 8c) configured to store the sensor data (U, T, V, A) of at least one sensor module (2a-2d), where the at least one access module (5, 5a-5d) is configured to access the sensor data (U, T, V, A) in the sensor module (2a-2d) and/or the sensor data (U, T, V, A) in the storage module (8, 8a, 8c).

9. System (1) according to claim 8, characterized in that each sensor data (U, T, V, A) stored in the storage module (8, 8a, 8c) comprises a plurality of sub-data, each sub-data with a specific time stamp, and the access module (5, 5a-5d) is configured to, when accessing sensor data (U, T, V, A) in the storage module (8, 8a, 8c), access only sub-data with a time stamp specified or a time stamp within specified range for the particular accessing.

10. System (1) according to any of ~~the preceding~~ claims 1 to 9, characterized in that the sensor modules (2a-2d) and/or the at least one access module (5, 5a-5d) and/or the at least one storage module (8, 8a, 8c) can be configured remotely ~~and/or during operation of the system (1)~~.

11. System (1) according to claim 10, characterized in that the sensor modules (2a-2d) and/or the at least one access module (5, 5a-5d) and/or the at least one storage module (8, 8a, 8c) can be configured to collect and/or access and forward and/or store sensor data (U, T, V, A) only in one or more preset time intervals ~~and/or only with a data rate limited by a predetermined maximum data rate~~.

12. System (1) according to any of claim~~s~~ 10 or 11, characterized by more than one access module (5, 5a-5d) and/or more than one storage module (8, 8a, 8c), where each access module (5, 5a-5d) and/or storage module (8, 8a, 8c) is configured to access and forward and/or store sensor data (U, T, V, A) only of a subset of sensor modules (2a-2d) and/or only of a subset of time intervals.

13. System (1) according to any of ~~the preceding~~ claims 1 to 12, characterized by the at least two sensor modules (2a, 2b) and the at least one access module (5) being part of a first subsystem (1a), and by a second subsystem (1b) with at least one other sensor module (2c, 2d) and at least one other access module (5c) configured to access the sensor data (V, A) of the other sensor module (2c, 2d), where the access module (5c) of the second subsystem (1b) forwards the sensor data (V, A) of the other sensor module (2c, 2d) to the access module (5) of the first subsystem (1a).

14. System (1) according to claim 13, characterized in that first and second subsystem (1a, 1b) are installed in different entities, in particular with the first subsystem (1a) being installed in an infrastructure and the second subsystem (1b) being installed in a vehicle.

15. Method for surveilling an infrastructure and/or a vehicle~~,~~ using a modular surveillance system with at least two sensor modules (2a-2d) of the modular surveillance system and one access module (5, 5a-5d) of modular surveillance system having a common design so that different kind of sensor data (U, T, V, A) can be handled by different modules (2a-2d, 5, 5a-5d) using the common design enabling simplified measuring of a network load of the system (1), with the method steps:

- collecting, by at least two sensor modules (2a-2d), respective sensor data (U, T, V, A) from a respective sensor (3a-3d) associated with the respective sensor module (2a-2d);
- accessing, by at least one access module (5, 5a-5d), the sensor data (U, T, V, A);~~ characterized by~~
- providing, by a clock module (4), a common time signal (t) to at least two sensor modules (2a-2d);
- providing, by the sensor modules (2a-2d), the sensor data (U, T, V, A) with a time stamp, wherein the time stamp is based on the common time signal (t); and
- forwarding, by the access module (5, 5a-5d), the accessed sensor data (U, T, V, A) by taking into account the time stamp~~.~~; as well as configuring the sensor modules (2a-2d) and/or the at least one access module (5, 5a-5d) during operation of the system (1) to collect and/or access and forward sensor data (U, T, V, A) only with a data rate limited by a predetermined maximum data rate which is preset dynamically in dependence upon a network load of the system (1).