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Contactless acquisition of vital parameters as the basis for the automatic detection of infections in gatherings at major events and in public places – **ZeroContact**

In order to detect the uncontrolled spread of dangerous pathogens in public places with a high volume of people at an early stage, an intelligent contactless platform for separating systems is being developed. The objective zeroes in on the development and assembly of a system with complementary sensors as a demonstrator for the contactless automatic acquisition and assessment of infection-relevant vital parameters in humans (temperature, blood oxygen saturation, heartbeat, pulse, breathing rate, and sounds), as well as the estimation of age and sex. Data acquisition is performed completely anonymously by non-contact sensor technologies (infrared camera, optical camera, acoustic sensor technology) and data fusion. Image data of the face are deleted after extraction of the vital parameters and then are no longer available in the target system ("Safety by Design"). By means of machine learning and assessment procedures, the above-mentioned relevant vital parameters are extracted from the raw sensor data. Subsequently, a statement referring to possible infections (e.g. flu, viral diseases) is made on the basis of the merged characteristics. Due to the fast and contactless acquisition of vital parameters, the system facilitates the detection of potentially infected persons in separating plants and thus supports in avoiding an uncontrolled spread of diseases. Additionally, unusual accumulations of symptoms can be detected. The multisensor platform will initially be used for separating systems, but will also be installed in passage ways. Potential places of application are areas with a high volume of people and pre-installed separating systems such as airports or mass events (trade fairs, concerts, major sports meetings, etc.).