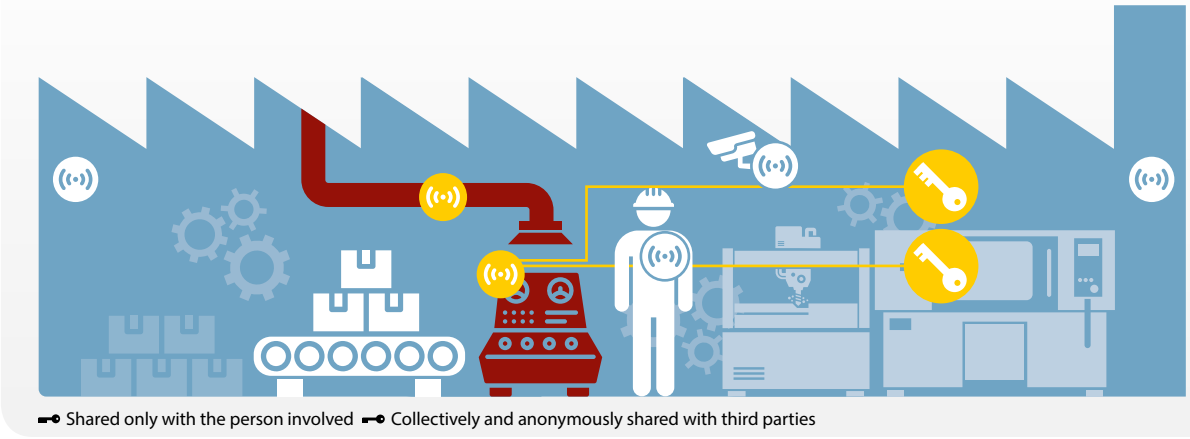
SENSORS AS DETECTOR



Sensors can be used to monitor the effectiveness of control measures or working procedures. This applies both to sensors measuring chemical substances and to so-called 'smart sensors' that measure physical quantities such as temperature, distance, orientation, vibration, pressure, etc. They are not applied to people but to equipment and machinery such as fume extractors. Examples would include:

– automatically switching on an extraction system if too high a concentration of a given substance is detected;
– automatically giving a signal if a spray gun is incorrectly aimed at a surface, increasing the risk of high exposure levels.
– giving a signal when a filter of a vacuum cleaner is saturated.

Advantages	Disadvantages
Improving the functioning of existing control measures, e.g. automatic activation of control measures.	Generates no insight into employee exposure.
In the automatic control of exposure (e.g. automatic extraction), this control does not depend on human action.	Over-reliance on sensors can create a false sense of security.
The possibility of immediately modifying a control measure (e.g. close the sash of a fume cup board, or connect an extractor) if the sensor gives a signal.	The sensor signal does not indicate what the required modification is: instruction is required.

ETHICS

– The use of sensors as detector can optimise the effectiveness of control measures or of working procedures, thereby reducing potential exposure levels. The use of this technique therefore contributes towards several important values *(health/well-being, responsibility, justice)*, without jeopardising privacy.
– The introduction of sensors as detector can have negative side effects:
  – The signal generated by the non-optimal functioning of a control measure can be seen by the employee concerned, but also by others *(well-being, privacy)*;
  – The sensor signal frequency of non-optimal functioning of a control measure can be logged and used to say something about the behaviour and attitude of the employee concerned, for instance in an employees' performance review *(responsibility, trust)*.