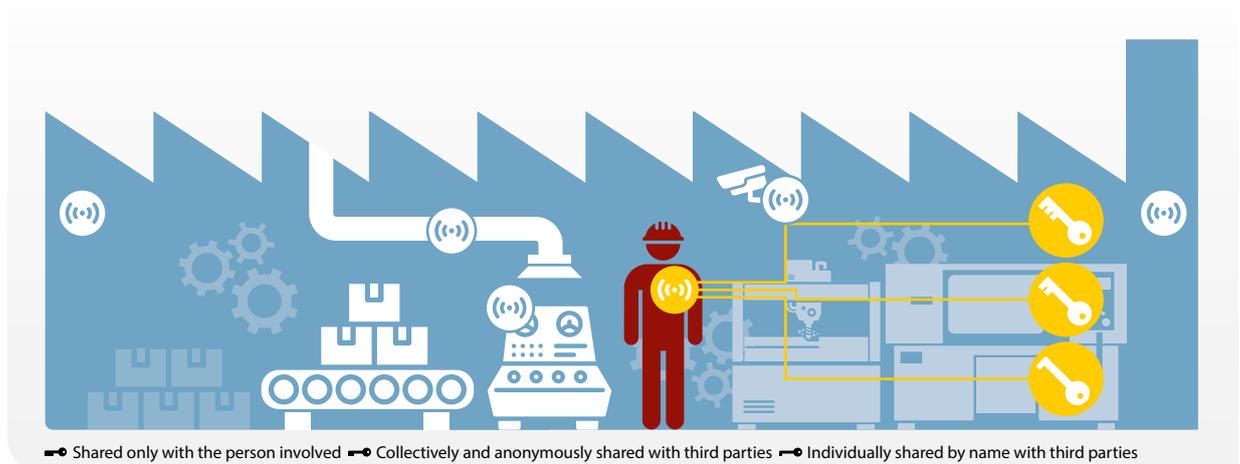


PERSONAL EXPOSURE SENSORS



Exposure sensors can be worn by employees on the chest or shoulder to measure their personal exposure levels. Sensors often record a measurement every few seconds, yielding an exposure profile (time series) for the entire working day. This can be presented to the employees themselves in real time, e.g. using an app. It can be visualized as an exposure profile, the average daily exposure, or (non) compliance of the exposure level in relation to an exposure limit.

Advantages	Disadvantages
Real time insight into personal exposure, enabling immediate intervention.	The sensor may become a distraction that the employee is constantly checking.
A warning signal can be given if the exposure level is too high.	It has to be clear what exposure level is 'too high'.
The sensor can indicate the total daily exposure compared with the exposure limit.	It is not immediately clear how this information can be applied.
The system can function without data storage, ruling out data abuse.	If data are not stored, employees themselves are responsible for responding adequately to excessive exposure. Without data storage it will not be possible to establish a link between exposure and health problems.
The system can also function with data storage. Data can be analysed collectively to identify appropriate control measures for the company (the responsibility of the HSE manager).	If data are stored, the data can be abused.

ETHICS

- Employees should have a say in whether they wear a sensor or not (*self-determination, well-being*);
- Employer needs knowledge in order to fulfil their responsibilities, but employee's knowledge also brings responsibilities (*responsibility*);
- Possible negative side effect: an employer may ask employees to perform work associated with high exposures because they have not yet reached their 'maximum exposure' for a given work shift (*justice*);
- Personal exposure data could be stored in an exposure register, allowing health complaints to be traced back to related exposures (*health, privacy, responsibility, liability*);
- Personal data could also be used in a negative way: included in an employees' performance review, or shared with potential new employers (*trust, responsibility*).