



Smart PPE

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What is smart Personal Protective Equipment ?

- **CEN Terms and definitions document is under development – publication foreseen Q3 2019**
- **Smart =**
 - With electronics ?
 - With sensors ?
 - Automatic reaction to environment ?
- **PPE versus system**
- **Active versus passive**

Examples

- **HiVis with LED**
- **Helmet with LED**
- **Safety glasses with AR**
- **Cooling/heating vest**
- **Inlay sole for footwear (heating, tracking, ...)**

Examples

- **Gloves with heating**
- **Gloves with GPS**
- **Gloves with infra red sensor for heat (firefighters)**
- **Bicycle helmet – airbag**
- **Fall protection – vest with airbag**
- **RFID in PPE – several applications**
- **Use of VR for training**
- **Helmet with detection system** (e.g. mining / construction)
- **Exoskeleton – PPE or not ?**

Some challenges

- **How to select ? Which functionalities ?**
- **Use**
 - Training wearers
 - Privacy
 - (Cyber) security
 - Reliability
- **Care and maintenance**
 - Washing / cleaning ?
 - Batteries ?
 - Fully integrated or (partially) removable ?

Why not more smart PPE/PPS on the market ?

▪ Does the market trust smart PPE/PPS ?

- Certification
 - Initiative 'good practice / roadmap'
 - Survey for manufacturers ongoing (<https://www.surveymonkey.de/r/GWHTBSM>)
- Standards
 - Standardisation request M/553
- Compatibility

▪ Uncertainty for suppliers

- Legislative framework
- Who is the manufacturer ?

A change in the way of working / behaviour might be necessary

- **System versus piece of equipment**
- **Over-confidence is a risk**
- **Overload of information for worker – he/she still must be able to do the job**
- **Data collection on site – what will be done with the data ?**
- **Training !!!**
- **Smart PPE helps training / correcting behaviour of person**
- **Value of equipment**
- **Care and maintenance of equipment different**
- **Do we accept failure ?**
- **1 product = 1 company responsible for safety of product ? Which one ?**
- **Cooperation PPE – working equipment / machinery – person**



Thank you for your attention

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