

ConIoT - Construction site safety boosted by IoT Smart workwear demo

ConIoT project aims at improving work safety and wellbeing in the construction sector by utilising IoT-based data-intensive solutions.

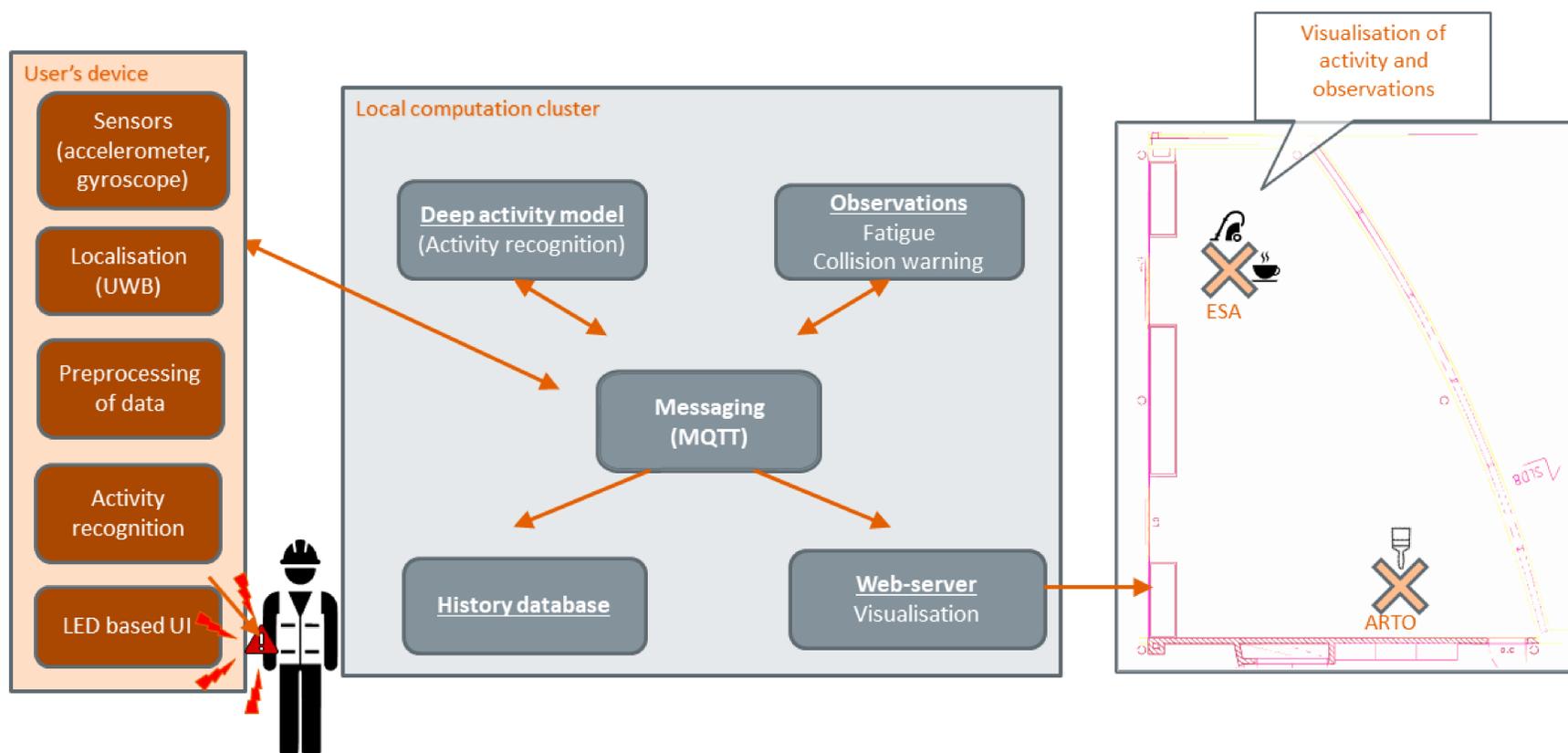
Innovations in the project are contributing to the user-friendly IoT-based data-intensive safety services in the construction environment through collaboration of experts from different sectors; technology companies, construction companies and research organization all with an extensive knowledge about IoT technologies and construction domain. Pilot trials in real working environments are in an essential role in the project as they provide an excellent starting point for research and validation of the developed IoT-based safety solutions.

Smart workwear demo

The construction industry is struggling with a high number of work-related accidents and injuries that most relate to a movement on the site. Construction workers also face ergonomic challenges at sites. Especially, repetitive movements and working in awkward positions lead often to overexertion of the musculoskeletal system in the construction work. In addition to the health and wellbeing related disadvantages for the employee, poor ergonomics in a work leads to negative economic impacts for employer and society. Smart workwear demo is first step towards the intelligent workwear for reducing accidents and sick leaves caused by a physical strain. Basic components of the demonstrator are:

- Smart workwear including sensors and LEDs for UI
- Deep activity model for recognizing work activities
- UWB localization
- Edge computing cluster and web UI

The demonstrator identifies different working positions (e.g. hands up working), and presents a physical stress and recovery level of the worker through a real-time three-step “traffic light” attached in the work jacket. Same information can also be explored through the web UI. The system is also able to warn possible collisions based on the localization service.



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beyond the obvious