NEW TECHNOLOGIES AND SAFETY IN AGRICULTURE: SAFETY AR

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**Abstract.**

New technologies, such as augmented reality or artificial intelligence, are able to offer contributions to delicate sectors of our society, such as the world of safety at work.

Suffice it to say that in 2021 in Italy accidents at work increased significantly and fatal cases were 1,270, 181 more than the 1,089 in 2019 (+ 16.6%). Against a reduction in deaths of about 30.1%, those occurring at work have in fact increased by over a third (+ 34.9%). Important numbers that make us reflect on the importance of correct training and information on safety at work as required by the European directives implemented by Legislative Decree 81/2008 in Italy.

One of the main problems in the world of agriculture appears to be the total negligence of employers in respecting the training and information obligations towards workers. For this reason, the University of Tuscia has developed, at the end of intense research, an augmented reality system called Safety AR, through which workers and also employers, pursuant to the very recent d.l. taxation and safety (146/2021), can train and inform themselves about the risks present in the workplace and avoid injuries or, in the most serious cases, white deaths.

Safety AR is an innovative multifunctional tool, which identifies the real needs of every single production process with an interactive and functional approach. Safety AR is accessible thanks to one of the most innovative technologies of the moment, recognized by the national development plan among the enabling tools of industry 4.0 because it increases real-world interactions without replacing it.

The Safety AR allows you to reproduce the safety pictograms on "markers", that is aluminum signs, which once framed by the workers through a phone / tablet and an application, will be animated in augmented reality explaining the meaning of the pictogram and the various risks and dangers. The data extracted from the Safety AR will be treated with the utmost respect for the confidentiality of the worker. Through this system, an important decrease in accidents at work is estimated.