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A virtual platform for remote surveillance, intervention planning and real-time feedback in research facilities

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Inspections and interventions in radioactive environments are often reliant on human personnel because of the complexity of the infrastructures that have not been designed for robotic or remote access. This is the case also for particle and nuclear physics experimental facilities which can become highly activated over time.

To alleviate problems with the decommissioning of the ATLAS inner detector at the Large Hadron Collider at CERN, a Virtual Reality (VR) Platform has been created. The platform provides a tool for training purposes in-situ and on mock-ups of the real detectors. Information on immediate and accumulated radiation doses can be fed back live or analysed in depth later. Applications of the system are presented together with research into extending the system towards an enhanced mode of operation in complex environments that is based on linking the virtual environment with a simultaneous localisation and mapping (SLAM) algorithm.

Alternate track

I read the instructions above

Yes

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