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On-line remote monitoring of radioactive waste repositories

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We propose an innovative system for real time monitoring of short and medium term radioactive waste repositories. Such a system behaves like a cheap scintillating Geiger-Muller counter and it is based on a new kind of gamma mini-sensor, developed at INFN-LNS, assembled with low-cost components: Silicon PhotoMultipliers and scintillating fibers. Front-end electronics and an FPGA-based counting system were developed to handle the field data and transmit them to the remote control system, able to show real-time and historical data in a graphical user interface. A new cheap neutron detector ^3He -free (patent pending) was developed to extend the monitoring also to neutrons.

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