

ERNCIP thematic group on Radiological and Nuclear Threats to Critical Infrastructure

IEC Standard for List-mode Data Acquisition in Nuclear Measurements



Solutions are needed to mitigate the threat to critical infrastructure from radiological contamination. Issues needing to be addressed at EU-level include certification of radiation detectors, standardisation of deployment protocols, response procedures and communication to the public. Reference to standards would enhance existing techniques that support field teams deployed in the event of radiological contamination.

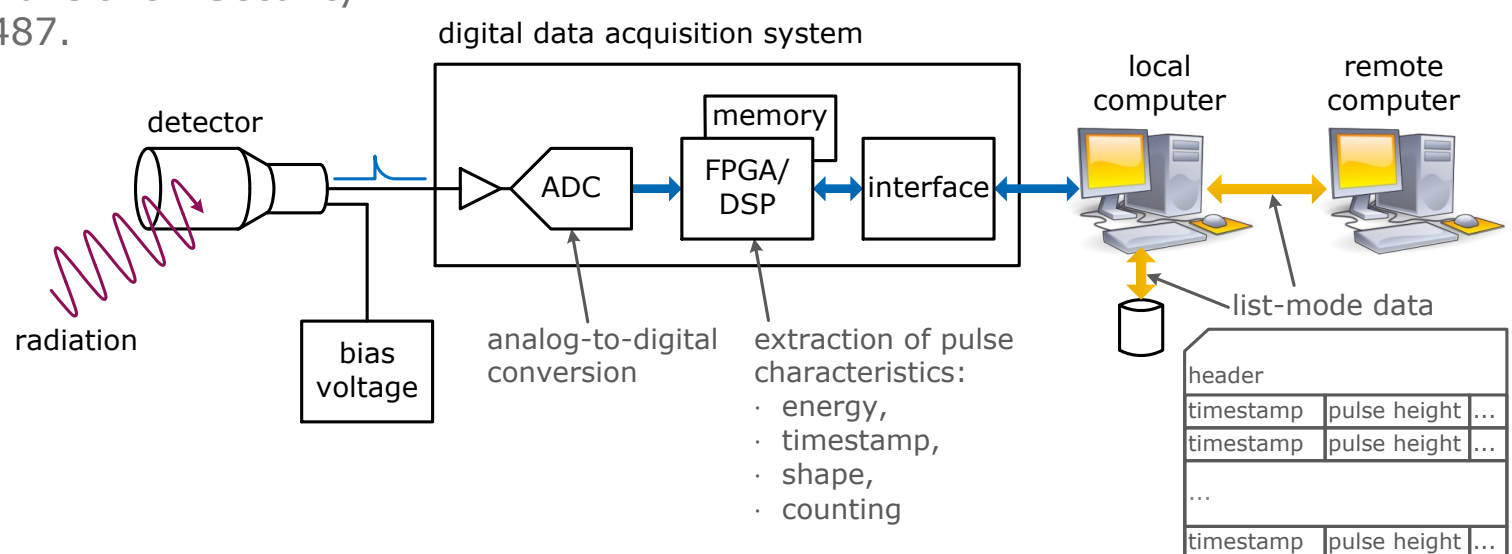
Need for a standard

Digital data acquisition instruments are becoming more and more popular because they offer advantages over data acquisition with conventional modular systems and allow new applications in detection and measurement of ionising radiation, to the benefit of nuclear safety, security, safeguards and forensics. The need for a standard for the format of the data presented by such instruments was recognised by CEN/TC 391 "Societal and Citizen Security" in the frame of mandate M/487.

This ERNCIP Thematic Group was assigned the task to perform the pre-normative research and propose the basic elements of a standard.

Accepted proposal for a new international standard

The Group triggered the creation of a consortium of four European laboratories which received funding from the Horizon2020 European Metrology Programme for Innovation and Research. The consortium developed a preliminary draft standard, which was accepted in February 2016 by the IEC Technical Committee 45 "Nuclear Instrumentation". The JRC leads the development of this standard, IEC 63047, planned to be published in March 2019.



ERNCIP Thematic Area

Radiological and Nuclear Threats to Critical Infrastructure

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Deliverables

In 2014, the Group reported on the state-of-the-art of list-mode data acquisition based on digital electronics (Report EUR 26715) and identified critical parameters and performance tests for the evaluation of digital data acquisition hardware (EUR 26976). In 2015, a survey was conducted to assess the needs of the end-users for the standardisation of the data format (EUR 27778).

<https://erncip-project.jrc.ec.europa.eu/>



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