

I. Bobok, A. Kobozeva, M. Maksymov, O. Maksymova
Odessa National Polytechnic University, Odessa, Ukraine

Checking the Integrity of CCTV Footage in Real Time at Nuclear Facilities

Video surveillance has become an important constituent part of the integrated security system of nuclear power plants. Due to this, the integrity and authenticity of the video transmitted by the surveillance camera are extremely important, and so is the possibility to identify violations of these categories of information in real time.

The authors propose a new method to detect one way of violating the integrity of the video sequence — “camera loop” hijacking. The proposed method based on identifying the perturbation in matrix of the current frame of the original video sequence in transition to the next frame ensures the efficiency of the method that is not dependent on the specifics and characteristics of the analyzed video sequence. The high efficiency of the method is confirmed by results of a computational experiment, under which type I and type II errors were not found. The practical value of the proposed method is the possibility of its work in real time because it is a polynomial of degree 1, as well as the simplicity and multiplatform implementation.

Keywords: integrated security system, video surveillance, video sequence, camera loop.