

Surveillance of Super-Extended Objects: Bimodal Approach

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Abstract : This paper describes an effective solution to the task of a remote monitoring of super-extended objects (oil and gas pipeline, railways, national frontier). The suggested solution is based on the principle of simultaneously monitoring of seismoacoustic and optical/infrared physical fields. The principle of simultaneous monitoring of those fields is not new but in contrast to the known solutions the suggested approach allows to control super-extended objects with very limited operational costs. So-called C-OTDR (Coherent Optical Time Domain Reflectometer) systems are used to monitor the seismoacoustic field. Far-CCTV systems are used to monitor the optical/infrared field. A simultaneous data processing provided by both systems allows effectively detecting and classifying target activities, which appear in the monitored objects vicinity. The results of practical usage had shown high effectiveness of the suggested approach.

Keywords : C-OTDR monitoring system, bimodal processing, LPboost, SVM

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