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DESIGN ISSUES OF THE CONCEPT OF EMERGIENCY MONITORING AND CONTROL SYSTEM BUILDING

Abstract. This article is devoted to the development of the concept of building an automated emergency monitoring and control system and determines its structure and territorial distribution. Examples of monitoring facilities have been presented and the urgency of the development and implementation of such systems has been shown. The proposed concept includes a multi-level hierarchical structure of the monitoring system with an open architecture, on the lower level, where multifunctional sensors of physical quantities established in controlled facilities or areas are located. It is proved that it is more sensors determine the reliability and data of all the monitoring system. With regard to the danger of debris flow monitoring system, the range of sensors in use has been defined. The problems of improvement of information content and control and warning efficiency have been considered. It is shown that the proposed concept can be implemented and function smoothly only if there is a modern software and hardware equipment. The problems solved at its various levels are described in detail by the example of the 3-level monitoring system.

Keywords: environment, monitoring, control, sensors, accident, technogenic, mudflow, pollution, the interface.

Introduction. The environment means the financial situation, which is in contact with humanity, and allows each human body to function on the planet. The environment includes: water, air and land. And if these environment components will not meet certain requirements, the population habitation in the area with broken or environmental conditions will be difficult or generally impossible.

Environmental disturbances may be caused by the influence of both human and can be technogenic. Human impact is most often seen in the pollution of water and air, deforestation in mountain and foothill areas, river basins, steppe areas.

Technogenic disasters are associated primarily with the seismic activity in the mountains and foothills, as well as floods of rivers, snow melt, overflow and breakthroughs of moraine lakes and so on, which finally cause a considerable economic damage in territories [1, 2].

With regard to Kazakhstan, a special damage from natural emergency situations falls on the mudflows. Mudflows are usually sudden and short-lived, often characterized by catastrophic after-effects, they cause huge material damage and are often accompanied with victims [3].

The current emergency monitoring and control system (EMCS) does not stand up to scrutiny in terms of problem solving, openness, reliability and efficiency [3].