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**MODERNIZATION OF IDENTIFICATION INDICATORS  
ORGANIZATIONAL-TECHNOLOGICAL RELIABILITY:  
SUBSTANTIAL AND FUNCTIONAL FORMULATION OF THE  
PROBLEM TO THE APPLIED ALGORITHMS**

Study of the influence of numerous and various random factors in the process of construction of buildings is possible only through the application of probabilistic-statistical methods and appropriate models. The influence of random factors destabilizing the work, is manifested in the change of the time parameters from the deterministic values, the deviation of the intensity of construction and installation works. Random factors include climatic, social, technical and other groups that typically do not manifest individually, and collectively. The effects of all casual factors on the production of construction works allows to eliminate the causes of failures and to improve the reliability of the interconnected construction processes.

Unlike technical systems, failure of which leads to the cessation of functioning of the device or design, in the construction industry the nature of failures is somewhat different. Deviations from the projected work progress caused by failures in the construction industry, lead to the violation of deadlines, but do not stop activities of the construction organization, construction flow or brigade.

It is possible to view the refusal as an event that changes the result of the activities of the construction unit. This increase in reliability is carried out by optimizing the technology and organization of construction works.

The historically formed complex of measures for the analysis of design decisions described in the current regulations, unfortunately, do not always help to identify a variety of technical problems. It is connected including with the fact that analyzes each block of the design decisions separately, which in turn, does not guarantee the absence of errors in General.

However today are insufficiently studied basic provisions of the Organizational and technological reliability as the most critical parameter for these projects. The study of this area are devoted to S.Bushev [1], A. Gayda [2], D. Nechypurenko [3], V. Pokolenko [6], A. Gusakov, A. Ginsburg [4], V.Mlodetsky [5] and other scientists. In the works of these authors formalized planning processes project costs, but on reducing the entropy of organizational and technological reliability even in the early stages of the life cycle of high-tech projects as biosferosumisni projects and create methodological bases of design, calculation and implementation biosferosumisnyh of construction in Ukraine under conditions they considered Not full enough

Using the criterion of basis of organizational and technological reliability (OTR) it is possible to build models of the major indicators of the samples in-situ testing the performance of the complexes, complete sets and individual construction vehicles at any location. This will allow to reliably predict the period of construction and installation works at the stage of design construction.

Information support of the OTR based on the common information space and a common information model of construction object for all involved in the creation and support of life cycle (design, technological preparation of production, construction, commissioning, operation). The concept of the OTR requires the use of open information systems analysis design solutions based on three dimensional modeling and automatic evaluation of design solutions.

Creation of information model based on the application of the ideology of a parametric, three-dimensional modeling BIM (Building Informational Modeling) using the platform of Autodesk — Revit Building as applied to the design of structural core (foundations, exterior and interior walls, floors, coverings, roof).

Support for "virtual" representation of information models and processes for all stages and subsystems of the life cycle of buildings based on the use of tools, PLM/PDM, such as a software product Lotsia PDM Plus. Based on the structure of the PLM system (Product Life Cycle Management) systems engineering is an essential part of the application software, which gives the opportunity with a given probability to ensure that the planned results of the functioning of the construction flow in terms of the random effects inherent in construction production at construction sites construction.

### **Література**

1. Бушуєв С. Д. Системна інтеграція підходів в управлінні будівельними проектами / С. Д. Бушуєв, О. О. Бойко // Управління розвитком складних систем. - 2016. - Вип. 26. - С. 43-48.
2. Гайда, А. Ю. Механизмы эффективного управления проектами в организационных системах с нечетко выраженными состояниями / А.Ю. Гайда, Т.А. Фарионова, М.В. Ворона // Управління розвитком складних систем. – 2016. – № 28. – С. 116 – 122.
3. Нечепуренко Д. С. Систематизація організаційно-технологічних факторів, які впливають на тривалість та вартість реалізації енергозберігаючих проектів комплексної реконструкції житлової забудови [Електронний ресурс] / Д. С. Нечепуренко // Строительство. Материаловедение. Машиностроение. Серия : Стародубовские чтения. - 2014. - Вып. 74. - С. 120-126. - Режим доступа: [http://nbuv.gov.ua/UJRN/smmssc\\_2014\\_74\\_25](http://nbuv.gov.ua/UJRN/smmssc_2014_74_25).
4. Организационно-технологическая надежность строительства / [А.А. Гусаков, С.А. Веремеенко, А.В. Гинсбург и др.]; под ред. А.А. Гусакова. – М.: Sv R – Аргус, 1994 – 472 с.
5. Организационно-технологическая и экономическая надежность в строительстве / В. Р. Млодецкий, Р. Б. Тянь, В. В. Попова, А. А. Мартыш. – Днепропетровск : Наука и образование, 2013. – 193 с.

6. Поколенко В. О. Запровадження інструментарію вибору альтернатив реалізації будівельних проектів за функціонально-технічною надійністю організацій-виконавців / Поколенко В. О., Рижакова Г. М., Приходько Д.О // Управління розвитком складних систем. - 2014. - Вип. 19. - С.104-108.