

# PROCEDURES IMPROVEMENT OF FORMING THE EXECUTION LABOR INTENSITY OF R&D

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**Abstract:** The study purpose is to increase the validity of the evaluating labor costs process on the performing research and development work (R&D). The official methods in force in the Russian Federation have applied as a methodological basis for improving the procedure as well as domestic and foreign methods for assessing the labor intensity of R&D. The proposed principles for assessing labor intensity are based on unit labor costs, applied for three types of R&D (typical basic research, changes in the main functional systems, and new development), and take into account three complex correction and labor deflation factors. The scientific novelty of the study is the formation of new principles for calculating the complexity of R&D.

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The R&D in the aerospace industry is associated with significant costs. The estimated cost of the work performed is the most important indicator for deciding on the financing type. The basis for adequate R&D pricing is assessing the labor intensity of research.

The main factors affecting the probability of forecasting results are as follows: presence of only a development concept; data lack to predict the labor intensity of R&D; high uncertainty of the research process.

The practice analysis shows that at aircraft manufacturing enterprises the actual R&D performance data do not correspond to the planned parameters, which is also due to an unreasonable calculation of labor intensity.

The principles for assessing the labor intensity are considered as a study object, study subject is the method and the model for assessing the labor intensity of R&D performance.

There are 10 methods for calculating the cost and labor intensity of R&D in Russia, three of them give some approaches to determining labor costs.

The application preparation guidelines for the formation of topics and financing volumes as a part of activities of the Federal Target Program “Research and Development in Priority Directions for the Development of the Russian Science and Technology Complex” for 2014–2020 determine the basis for organizing labor standards during R&D, concepts of the time rate (labor intensity), labor intensity standard, labor rationing methods.

The methodology for substantiating the initial (maximum) contract price (lot price) to perform research, development and technological work within the framework of the implementation of Federal Target Programs and extracurricular activities in the science field coordinated by the Ministry of Education and Science of the Russian Federation gives the rules for justifying the labor intensity and the work timing under the costly method.

The methodology for calculating the projects’ cost and the initial (maximum) contracts’ price proposed for implementation within the framework of the Federal Target Program for the Development of Education for 2011-2015 establishes labor standards for calculating the cost of developing, finalizing and developing automated systems and software products. The coefficients are used as correction factors: complexity, novelty, value of results, scale, quality, performer qualification.

The analysis of the official Methods for assessing the R&D cost has shown that the labor intensity of them is not adequately systematic. The analysis of the methods for assessing labor intensity used in domestic and foreign practice allowed us to identify factors that make it possible to improve the forecast accuracy, as well as to formulate shortcomings.

The proposed methodology for assessing labor costs is based on the following principles: considering the technical and technological characteristics of R&D, differentiating work into typical and innovative, applying complex interval adjustment factors (including matrix type), applying an infrastructure adjustment coefficient, and intensity.

It is necessary to use the specific labor intensity indicators as criteria for assessing the accuracy and reliability of the forecast labor costs. The proposed approach allows damping the shortcomings of existing methods and techniques for determining the labor intensity of innovative R&D.

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