

UDC 687.12.123

**THE ANALYSIS OF DEVELOPMENTS
IN THE FIELD OF AUTOMATION
OF TECHNOLOGICAL PREPARATION OF PRODUCTION**

**АНАЛИЗ РАЗРАБОТОК
В ОБЛАСТИ АВТОМАТИЗАЦИИ
ТЕХНОЛОГИЧЕСКОЙ ПОДГОТОВКИ ПРОИЗВОДСТВА**

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Different approaches to improve production processes in the apparel industry give reason to believe that modern software and hardware (such as CAD, ASTPP, AWP) do not solve the problem of making an informed decision about the launch

of the designed model in production. Decision should be based on the calculation of the optimal value of the series and schedules, different pricing models, groups of production. In this connection, the solution of this problem is one of the important ways to improve the technological preparation of production.

В работе проведен анализ различных подходов к совершенствованию производственных процессов в швейной отрасли, который дает основание полагать, что современные программно-технические средства (такие, как САПР, АСТПП и АРМ) не решают задачи принятия обоснованного решения о запуске проектируемой модели в производство. Решение должно приниматься по результатам расчета оптимальной величины серии и расписания запуска моделей разных ценовых групп. В связи с этим решение данной задачи является одним из актуальных направлений совершенствования технологической подготовки производства.

Keywords: computer-aided engineering system, module, technological sequence, processing methods.

Ключевые слова: система автоматизированного проектирования, модуль, технологическая последовательность, методы обработки.

The advantage of automation is given to the design preproduction – is explained by the possibility of a good formalization of the tasks for which the developed CAD clothes. The main difficulty of automating the design process lies in the fact that the process, questions of its establishment and functioning are poorly formalized and exploring the area. Problems lie in the species diversity of garments with different materials, structures and technologies. Development of technical and scientific tasks is greatly simplified by using models and simulation methods of objects, processes and phenomena. Many of the technological preparations of manufacture of garments have a connection with the design system and solve problems, not only of designing technical diagrams processing nodes, but also the standard cost of time, the formation of technological sequence of operations, designing schemes of division of labor. Technological preparation of production systems is presented in "Grace", "Relic", "Comtense", "Assol", "Julivi" [1].

Module Assol technologist "CAD" automates the compilation and calculation of the technological sequences, charting the division of labor, reporting, and printing documents. Allows you to recruit new technological sequence (TA) from the ground or on the basis

of TA units and indivisible operations. The cost of the indivisible operations units and TA are automatically calculated based on the current tariff coefficients. Charting the division of labor (RT) performed in interactive mode, and consists in the distribution of indivisible operations on organizational operations (employee or group). TP content of sites or specific indivisible operations are transferred to the organizational copy operation from one directory to another, you can set the % occurrences, i.e. allocate indivisible operation between several employees.

In the process of complete circuits RT dynamically calculate all necessary parameters for institutional operations or a dedicated group of indivisible operations: time, cost, utilization, and also displays information about currently used in organizational operations equipment, etc.

Subsystem "Manufacturing" CAD "Grace" is designed for creating and maintaining the data without the equipment, specialties, freight rates, Handbook of indivisible and institutional operations, preparation of technological sequences, patterns of division of labor, timing and cost of manufacture. After charting the division of labor is created automatically schedule consistency, which reflects the degree of utilization of institutional opera-

tions, reveals the deviation of their duration and take the optimal corrective action; summary of the equipment; summary of the workforce; summary statement for the payroll.

Computer-aided design technology garments Eleandr designed to develop a sequence of manufacturing a new product, costing time to complete transactions and prices (in automatic mode), the formation of the output documents. CAD Eleandr also includes modules perform the division of labor, accounting and analysis work, the calculation of accessories. These modules can operate independently of each other, using information from the draft articles, developed in the basic module. The module design of the production process allows for automatic or manual mode, or combined to form several options in an organized and technological scheme of the flow (the division of labor) for given initial data. To analyze the organizational and technological solutions used flow diagram of matching time spent on organizational operations, with tact flow. Accounting module and analyzing the results of work designed to introduce operational information about the actual production, which allows us to estimate the load on each artist, to calculate wages and transmit the data to the accounting system. Calculation module hardware provides automatic calculation of each type of thread needed to manufacture the product.

AWM Program "Technologist" CAD Comtense designed to automate the work of technologists pilot and clothing shops and solves the following tasks: drafting process of the sequence (TA) manufacturer of garments, the valuation of time execution of operations, calculation of the value of individual transactions and TP as a whole division of TA on organizational operations in accordance with tact process (automatic, manual, or the combined method), making individual assignments working on the basis of technological sequence, calculation of consumption of sewing thread. Drawing TP manufacture of garments in the programs possible in three ways: by modifying the existing TAs for one type, "quick" set of TA operations and units available in the database (DB), a consistent set of

TP with simultaneous replenishment database production operations.

The module "Technologist" CAD "Relic" allows you to develop a technological sequence (the introduction of database technology operations), normalization of work on the basis of accumulated in the enterprise database, division of labor, the calculation of threads and accessories. The database is formed by an individual for a particular user, contains guides for the range, type of assembly units, facilities, tariff ratios, indivisible operations, assembly units, models [2], [3].

Advantages of the best from domestic CAD is a flexible modular approach to the organization. The modular structure of systems makes possible the acquisition and development of parts, which is an important factor for domestic enterprises in accordance with their financial and industrial interests in the current economic conditions. The number of CAD that incorporate features of the individual companies and are developing in accordance with their requests is limited.

Development of an automated workplace (AWP) technology is an important aspect in the development of CAD clothes. These systems should ensure the selection of materials for the package, depending on the price of the product, the choice of treatment methods taking into account the main characteristics of the materials in the package and drafting process of the sequence of processing products an important role in modern conditions of production, is the calculation of the optimal value of a series of models for different price segments of the market, taking into account the material cost of designing new products and then scheduling the launch of models of different price groups in the industry.

There is currently no data on workstations technologies for designing processes garments of different price groups. Analysis of existing systems has shown that the existing process modules CAD clothes act as an information guide technologist.

In the known CAD there are no engineering solutions in the process "model of the package of materials" – processing methods for the preparation of models of different price groups for production.

CONCLUSIONS

1. Modern CAD clothing on the market, do not differ fundamentally in functions, but the difference is in the representation of features that allow you to design and technological preparation of production, ease of use and principles of working with databases.

2. In this connection, the solution of this problem is one of the important ways to improve the technological preparation of production.

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Рекомендована кафедрой технологии, конструирования изделий и товаров. Поступила 18.06.16.