4. Typical Platform of a Decision Support System Software Complex in an Enterprise Management System

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Introduction. Decision support systems for planning the production activities of enterprises is an integral part of automated enterprise management systems, so that the development and testing of standard design solutions in this area is currently relevant.

Materials and methods. Modern decisions concerning properties and criteria for selection of platforms for software implementation of web-oriented client-server systems in application to design of decision support systems were studied.

Results. In the presented paper, a typical platform of a software complex of decision support systems in the enterprise management system is offered. The decision on set of typical program components of systems of support of decision-making and decisions on their joint application are based on classical multilayered architecture with distribution on following components:

- is a layer of controllers, through which the interaction with the client part is provided;
- adapters at the level of which data is converted from customer requests to the main business objects on which further processing is performed;
- classes checking the input data for compliance with established rules;
- business services that are directly responsible for executing business logic;
- auxiliary tool classes to which business services delegate the execution of individual transactions;
- repositories designed for direct handling of data.

The program system is designed to “thin client” and includes: software platform Spring Framework, which in general provides the construction of software infrastructure of the subsystem; means of Junit library and Mockito software platform for modular and integration testing of the code of the developed system; Hibernate object-relational mapping tools for working with data; HTTP Request-Response protocol as the basis for interaction between the server and the client side; Open API describing the interfaces between the server and client parts; means of forming web-pages for displaying them in the user’s browser; an approach and tools for continuous integration to the development of situation center code based on the Jenkins software product.

Conclusions. The given model of interoperable aggregate of program platforms provides performance of all basic stages on creation of a decision-making support subsystem — from construction of a program infrastructure of a subsystem to modular and integration testing of a program code. The basic advantage of the offered model is an easy application of protection systems — from standard alloying to introduction of electronic-digital signatures. The proposed software and technology solutions presented in the model have been successfully tested in the decision support system for the formation and operational reconfiguration of production plans for the implementation of enterprise contracts [1].

References

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