Problems Of Information Support In Designing The Development Of Hydrocarbon Deposits

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ABSTRACT

This article provides information on the creation of a database and its integration with a mining and geological database in the oil and gas industry using database information.

Keywords: information, oil and gas production, subsystems, data bank, integrated, object

Introduction

As is known, oil and gas production is a complex, multifunctional specialized area of human activity. The creation of a system for collecting and processing information for such an industry with the organization of information exchange of functional subsystems is a complex and multifaceted problem. Traditionally Oil production is divided into subsystems corresponding to areas of knowledge (geology, geophysics, drilling, development, production and preparation of products) and into subsystems corresponding to levels of activity (management, production, preparation of production, science) .

Main part

Information generated in oil and gas production subsystems is divided into internal information of the subsystems and information transmitted to other subsystems. The latter eventually becomes information for collective use and represents specific and generalized knowledge in the system.

The process of automation in oil and gas production has led to the creation of automated systems for various purposes, reflecting the existing division of labor, which will henceforth be called functional subsystems (automated control systems for the industrial safety and process control of enterprises, CAD systems , etc.).

Each functional subsystem has one or more databases, which have accumulated factual material on most oil and gas production facilities . Currently, the stage of intensive quantitative growth of databases and files for automated receipt of various types of documents is ending. The next stage will be the linking of functional subsystems into a single system. based on an integrated data bank. Such

a bank should provide each user in the oil and gas production system with consistent and up-to-date information in any moment in time. In our understanding, the " integration " of a bank is determined not by the choice of a single DBMS and standard software for various subsystems or the organization of a centralized super-base with access for remote users, a mutual agreement representation of data by different users and the adequacy of displaying data from one subsystem to another, with so that every specialist user can work with data, the structure of which corresponds to the system of its semantic abstractions.

As long as isolated functional subsystems were concerned, the inconsistency of data representations did not hinder the development of subsystems. The situation changes fundamentally when creating a system based on an integrated data bank, when it is necessary to ensure the collective consistency of subsystems and data. The case is further complicated by the fact that the oil and gas production facilities and related enterprises are geographically scattered, and, according to modern concepts, Primary processing of information should be carried out where it is information is born. Therefore, the integrated bank must function in a computer network environment production (scientific and production) association and be distributed both territorially and by areas of activity.

Conclusion

Thus, an automated system for collecting and processing geological and field information in oil and gas production based on an integrated distributed bank data should connect functional subsystems and their databases into a single information conveyor lower (automated control system of industrial safety and process control at the enterprise) to the highest levels of management in the association, ministry, including the industry science and design.

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