

Summary:

The subject of this dissertation is the linking of mathematical models for the purposes of target-optimized production planning in the crude-oil refining industry. The approach developed to this end creates a possibility of establishing the global optimum in the sense of an extreme-value concept of maximized profit contribution for all the planning models involved.

In order to determine a technically suitable system for implementing the approach developed in the context of this dissertation, existing planning methods will be studied with respect to the compatibility of interfaces, degree of dissemination and the optimizing algorithm used. At the same time, the linking of two LP systems reveals that disseminated optimisation is suitable for the implementing of this approach.

Building on the mathematical proof, the algorithm developed for disseminated optimization is represented in terms of structure and function, and the implementation described in existing LP systems.

The practical implementation of the system of disseminated optimisation involves a consideration of hardware- and software-related and organisational factors. The scope of system implementation is to be discussed.

On the basis of the developed system, systematic series of tests with simplified model functions for determining the possibilities and limits involved are to be described. The results of these series of tests are to be used to formulate minimum requirements regarding the target function of the models used, in order to ensure that the corresponding global optimum is established.