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BOOK OF ABSTRACTS

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CREATING KNOWLEDGE BASE OF EXPERT SYSTEM WITH ONTOLOGY USE

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Technological processes of food industry are difficult objects for automatic control. There are many methods for automatic control of these objects. One of the famous methods is the technological processes control with the use of expert systems.

The knowledge base is the main component of the expert system. There are many different methods to build a knowledge base of the expert system. Among these methods ontology has its popularity.

Ontology is formally obvious description of the concept of analyzed domain area. Ontology consists of concepts, attributes of concepts and constraints imposed on the concept. Ontology describes basic concepts of the domain area and defines the relationship between them. It is used for creation of knowledge base including a number of concepts.

The knowledge base of this expert system consists of ontology of the domain area and precedents. Ontology of the domain area is built on the basis of detailed analysis of the technological object.

There are many programs used for creation of ontology. One of the famous programs is Protégé. The plugin CLIPStab of Protégé can export ontology construction for use in the expert system, which was created with the help of programming languages of CLIPS expert systems.

The domain area of the rectification unit on a distillery was analyzed. After a detailed analysis there was constructed ontology of the domain area, which will be used to create a knowledge base in an expert system for the technological object control.

In addition, knowledge base will include precedents for technological objects control that were found during the time series analysis obtained from rectification unit.

The jCOLIBRI program make it possible to simulate work of rectification unit with the use of precedents and ontology of the domain area.

Such a control system with the use of expert system will effectively control the rectification unit on a distillery.

KEY WORDS: expert system, ontology, precedent