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Business rules based oil products logistics management system simulation

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ABSTRACT: In the modern world high quality oil products supply is essential factor of the sustainability almost any business running. Meanwhile from time to time there arise different problems which create the difficulties for the customers "just in time" supply. The oil companies should perform each step monitoring the logistics processes for detecting any significant deviations from regular state of art and in case of emergency to interfere into the process for to rectify the situation. Due to lack of time in such situations for decision making and very rigid rules of Russian petroleum logistics standards [1], in most cases it is desirable to exclude "human factor" to some extent from decision making process. Business Rules Management System provides such a possibility, but it has very significant restrictions. The first of all, the expressive power of language in these systems is not enough high and in many cases the structure of the programs, in which business rules are inserted, not flexible. We think that situation calculus [2], adapted to the oil logistics problems, may overcome these restrictions. We do not pretend to develop situation calculus theory, but we would like to apply this approach to the domain of oil product supply, have in mind possibility to exclude human decision maker from decision making process when time factor is the most crucial parameter. Our first step is to find out, how some essential for situation calculus model construction concepts, may be extracted from oil logistics routine practice and procedures.

AUTHOR KEYWORDS: Actions designing; Business rules; Logistics management system; Petroleum transportation; Problem situation in oil logistics; Situation calculus

INDEX KEYWORDS: Actions designing; Business rules; Crucial parameters; Decision making process; Expressive power; High quality; Human decisions; Just in time; Logistics management systems; Logistics problems; Logistics process; Management systems; Model construction; Oil companies; Oil product; Situation calculus; Time factors, Interoperability; Petroleum transportation, Decision making

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