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Basic algorithmic shell of onboard real-time advisory expert systems for operation situations typical for an object. (English. Russian original) [Zbl 1294.68133](#)

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Summary: The basic algorithmic shell for onboard real-time advisory expert systems for typical operation situations of anthropocentral objects is oriented on the formal model of the subject domain which includes the following ideas: general operation problems of an anthropocentral object, semantic networks of typical operation situations and problem subsituations in them. This system possesses two hierarchical levels in the knowledge base. On the first level, the production rules activate an adequate problem subsituation in real time. On the second level, problems of this subsituation are solved using the dynamic models of development of its fragments using the following inference mechanisms: multicriteria choice of a decision alternative, decision according to a precedent, decision based on an optimization problem, production rules. Upon development of an onboard real-time advisory expert system for a particular typical situation, the basic shell is filled with knowledge related to this typical situation with simultaneous rejection of unclaimed fragments. Upon program implementation of the algorithmic shell filled with knowledge, the shell is adapted to the onboard information environment of a given type of anthropocentral object and computational capabilities of the onboard computer system.

MSC:

68T35 Theory of languages and software systems (knowledge-based systems, expert systems, etc.) for artificial intelligence Cited in 1 Document

Keywords:

onboard real-time advisory expert systems; two hierarchical levels; knowledge base; multicriteria choice of a decision alternative

Full Text: [DOI](#)

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