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CHOICE OF MODELS FOR ACCEPTANCE OF TARGET ORIENTED STRATEGY ACTIONS

In the integrated operative [1÷5] control (IOCS) systems is drawn on sets of the problem-oriented models, which afford basic of structural organization of the systems which accordingly are basis of description of conduct. The basic regions of the use of models are following at the organizational management:

1. ***controller's management on the basis of net models of actions with inherits copulas;***
2. ***Adding of curricula of functioning of the aggregated objects in IOCS on the basis of having a special purpose plans;***
3. ***Research of the modes of the IOCS functioning and procedures of acceptance of having a special purpose decisions.***

1. Introduction

The design of processes in the mode of dialog based on the Petra nets in the real time is the effective drawing tool of dynamic situations. At it the Petra net belongs to the fragment of net of active actions: $S_{\Pi} = \{P, T, F, W, M_0\}$, where *P* – set of elements of net, that determines the location of action (O); *T* is great number of transitions at the change of the state; $F = (P \times TUT - P)$ it is the relation of incident places of transitions $W : F \to N\left|\{0\}\right.$ is the function of initial marking.

2. Intention

The models of communications between the levels of hierarchy based on procedure of aggregation of criteria of importance at the washed out great numbers of parameters are determining for high-quality communications in the hierarchy of the difficult system.

Presentation of criteria of a different level of hierarchy as the fuzzy sets [2], formal copulas of aggregation it is possible to carry singing with formal copulas on the fuzzy sets based on functions of belonging in a kind:

$A = \{\mu_A(x)\left|\forall x \in X\right.\}$ - Fuzzy set;

$\mu_A : X \to [0,1]$ it is function of belonging.

Properties characteristic for the IOCS models:

- $\forall (x_1, x_2) \in X : \quad \mu_A(x_1) \langle \mu_A(x_2) \Leftrightarrow x_2 \rangle x_1$;
- $\forall (x_1, x_2) \in X : \quad \mu_A(x_1) \langle \mu_A(x_2) \Leftrightarrow x_2 \rangle x_1$;
- $\mu : \langle X, S_1, S_2 \ldots S_n \rangle \to \langle [0,1], T_1 \ldots T_n \rangle$,

Where *Rang* is order of priorities, *Id* is the statement of indifference (indifference) $S = \prod_{i=1}^{n} S_i \neq \varnothing$ is laying out of great number X, $\{T_i\}_{i=1}^{u}$ - laying out of interval of belonging.

In quality, the models of aggregation at represented criteria of intercommunications between the levels of hierarchy of apply procedure with the use of fuzzy sets.

The rules of aggregation [2] of functions of belonging are built based on models and procedures:

- aggregation on the basis of statement of minimum:
$$H_1 : \mu_\theta = \min(\mu_i), (A_1 \ldots A_n) \subset \theta \subset X$$, where *X* is unclear problem space;
- aggregation on the basis of statement of maximum:
$$H_2 : \mu_\theta = \max(\mu_i);$$
- aggregation on the basis of statement of gravimetric association of functions of belonging:
$$H_3 : \mu_\theta = \left(\prod_{i=1}^{m} \mu_i \bullet \delta_i \right)$$ it is geometrical model;

$H_4 : \mu_\theta = \left(\prod_{i=1}^{m} \mu_i \bullet \delta_i \right)^{1-\gamma} \times \left(1 - \prod_{i=1}^{m} (1-\mu_i)\delta_i \right)^{\gamma}$ it is arithmetic model.

We will consider the models of current actions subject to the condition implementation in the real time of requirements of technological process in the mode of operative management:

$\forall \zeta : H_L\left[\varphi(\zeta_j, t) \in \Phi_j^d\right] \wedge \forall \zeta : H_L\left[\omega(\zeta_i, t) \in \Omega_d\right] \Rightarrow \gamma_{l,k}$, where is parameter of technological operative action; $H_L[\ ]$ it is logical predicate of presentation of situation; $\varphi(\ )$ it is function of parameter *(l, k)*; ( ) are modes of operating action; ω, Ω are great numbers of parameters of the previous state.

Operation can be executed at presence of, then action $L_{l,k}$ at present resources through

$\forall_n : H_l[P_{rn} \rangle 0]; \quad H_L[\alpha_{l,k}] \wedge H_L[U_l] \Rightarrow \beta_i$, then

$\{\forall_n : H_L[P_{rn} \rangle 0], \quad \exists U_i P_{rn}[U_i, t_i] \neq 0\} \Rightarrow \alpha_{l,k,n}$ It is condition of implementation of action with intensity α.

By the eventual result of net of successive actions, it is realization of having a special purpose task from the initial state to the end on the basis of the proper information. In IOCS, there are three standards calculable-informative components [1÷5]: data; Knowledge (governed, procedures…); mechanism of conclusion.

Knowledge is in the system form group on concepts and subject. Subject knowledge's are object-oriented and display a structure and descriptions of blocks and the IOCS elements.

Mechanisms of logical conclusion in the control system for the third components of intellectual activity come forward, as interpreter of rules of products. Description of operations comes forward in this case, as rules of products, realization of which there are actions. In these rules, knowledge will be pawned about strategies of actions and condition of their possible realization, algorithms of actions.

Two methods of presentation of tasks of management are selected in IOCS:

- planning in problem space of the system (system of projection);
- Planning in space of tasks (system of reductions).

In the projection system space of search of decision appears as directed locally-complete to the count, top *X*, which is designed in problem space of the system and arcs $\{r_i\}$ display achievement of co-ordinates of the state of the *X. Procedure of* decision is taken to finding of minimum path on the column *of g* in direction from initial one to the having a special purpose co-ordinate on basis as a result of implementation of execution sequence.

In the system of reduction the process of decision of task of acceptance of decisions consists in decomposition of initial task of transition of the system from the initial state in the target system of subtask to that level when the known analogies of their decision

For the decision of task of search of path on a column, it is possible to use methods:

- method of direct wave: $\exists g_i, \exists \mathrm{Alg} U_r^g (X_0 \to X_{ci})$;
- method of reverse wave: $\exists Strat\, U_n(g_i) : (X_{ci} \to X_0)$,

where U_r^g is management on the column *of g*; $Strat\, U_n(g_i)$ it is strategy of search on a column.

The control system of construction of net of actions on *g* must провіряти here terms of implementation (operation is action) on a resource and інформацій1не providing [2,3]:

$$\left\{ \exists \Omega_l = \left(\Omega_l^1 \wedge \Omega_l^2 \ldots \Omega_l^4\right), \quad \left|\hat{\Omega}_l\right| \rangle 0 \right\} \Rightarrow \left(\exists\, Strat\, U(C_i / \Omega_l) : X_i \xrightarrow{\rho_{ij}} X_i \right).$$

The chains of acceptance of decisions are formed accordingly on priority rules with a additive and multiplicative structure, where is gravimetric function;

$$PR_M = \prod_{i=1}^{n} (W_i PR_i) \equiv \left\{ PR_1 \xrightarrow{W_1} PR_2 \xrightarrow{W_2} \ldots \xrightarrow{Wn+1} PR_n \right\}.$$