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GAME ENGINEERING, INVARIANT ENVIRONMENT FOR SUPPORTING THINKING - STRATEGIC TECHNO-THEATER

The author of the article worked at the All-Union Scientific Research Institute of Organization and Management Problems of the State Committee on Science and Technology, where, under the leadership of the academician V.M. Glushkov. A nationwide automated country management system was created for accounting and planning. There were five functional departments in accordance with the hierarchy of country management that existed at that time: National, Republican, Industry, Industrial control system (ICS) and the Department of Computing Centers for Collective Use.

In the concept Glushkov down the idea of creating centers at the territorial level to support the activities of municipal organizations and as the computer base and directly urban residents develop. In the development of the ideas of Glushkov and the project of the Strategic Techno-Theater (STT) is being created. In 1982 Glushkov passed away and work on the creation of OGAS (National Automated System for Computation and Information Processing) were curtailed, and the author of the article went to work at GOSSTROY (State Committee for Construction) USSR.

In the future, the article is devoted to the description of the process of creating and practical application of an invariant environment for supporting group thinking activity: STT and its use for a multifactorial assessment of urban development options, but the practice of using STT tools showed their invariance and the possibility of using them for various areas of management activity.

The original name was: “Accelerated Design System – Invariatron”. The origin of the system was started in the Central Scientific Research Institute of Projects of the USSR State Construction Committee in the department under the leadership of G.P. Shchedrovitsky, and at the Construction Exhibition, in 1986 the Invariatron system has been demonstrated. In 1989 in MOSPROEKT-3 of the Glavmoskomarkhitektura,

a working studio of the same name was created, it was the first situational room in the civil sphere in the USSR, which in 1992 together with the developers, it was moved to the Administration of the President of the Russia to create the Situation Room of the President of the Russian Federation.

Since 1998 the creators of the studio worked at the RANEPА, and then at the RANEPА, where in a number of institutes of the academy, implementations were carried out into the educational process, including work at the Training Situation Center. In 2001 a new version of the software was declared – the STT, developed by the students of the Moscow State University, with new algorithms for assessing options for solving a problem situation. In this version, there were already three screens of the system for displaying a problem situation and separate workplaces for the director of the game session and the facilitator at the table of the group game technology brainstorming session. In this article, an example of a number of practical multivariate analysis of options for a number of solutions from various problem situations is illustrated.

STT technologies have found their application at the Faculty of National Security, and at the outfit of other faculties of the RANEPА.

It should be noted that in the process of evaluating options for design solutions based on studio technologies of STT, the authors' know-how was practically applied - the synthesis of the figurative and analytical components of the activity of the cerebral hemispheres in solving specific problem situations, and the interaction of these processes, which leads to the insight of a group of users, and increases the efficiency of their joint work at the game-technical brainstorming table in the STT studio on three screens of collective display of information in off line mode.

The well-known separation of analytical-logical (left hemisphere) and figurative situational-associative functions (right hemisphere) of the brain is taken into account in the analytical module when designing the group interface of the developed interactive-analytical system of group decision support STT. The presented environment belongs to the class of BRAINWARE systems - support for thought activity.

At the first stage, a cognitologist, together with experts, creates a list of relevant (important) factors and creates their visualized versions. Next, an interactive-analytical scenario for assessing relevant factors and solution options (analogous to a town planning council) is implemented, where all stakeholders carry out group game-technical assessment (weighing) of factors, and then pairwise comparison of variants of a problem situation (in this case, architectural and planning solutions) for each of factors. Fig. 1.

On the figure 1 the working moment of assessing the architectural and planning solution is shown, which is currently quite relevant in the conditions of sealing development. All stakeholders are involved in the assessment process: developer, architect, members of the public and municipal authorities. As a result of the group assessment, a consensus of all stakeholders is achieved, conflict situations are eliminated and the socio-psychological climate is improved.

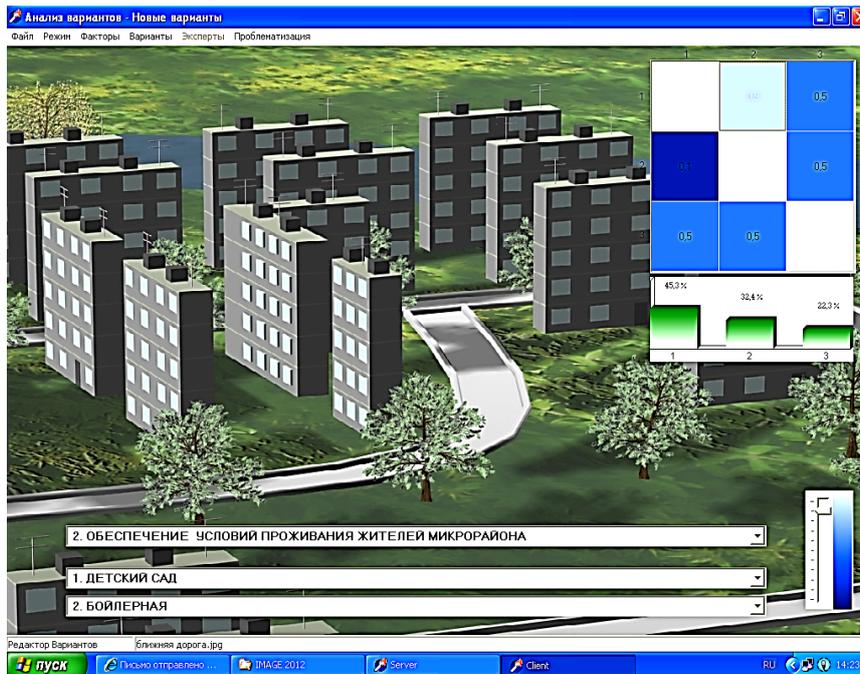


Figure 1 – Assessment of the urban planning option

A group of stakeholders, together with a game technician, a facilitator and a cognitologist, "weighs" the options among themselves using the STT support environment and gets an image of options for architectural and planning solutions. Thus, a group of stakeholders, including members of the public, is directly involved in a multifactorial and multivariate assessment of options for architectural and planning decisions, reaching a consensus on all controversial issues, which removes a conflict situation among the population and this type of analytical environment can be the municipal level of the Electronic Government.

Figure 2 shows the working moment of the experts assessment of the development of the environment in the theater of military operations in Donbass in 2014.

Factors and options for solutions to analyze the situation in Donbass as of 05/16/2014, created by a group of listeners at a master class session on conducting a collective interactive analytical assessment of the situation in the STT environment.

1. Factors of the problematic situation "UKRAINE -2014":

- US influence
- EU influence
- Influence of the Russian Federation
- Information war: propaganda
- Historical processes
- Availability of weapons
- Raw material dependence

2. Variants of the problem situation "UKRAINE -2014"

- 3rd World
- Federalization of Ukraine
- Victory of the Kiev government
- Formation of 3 new states
- Stagnation

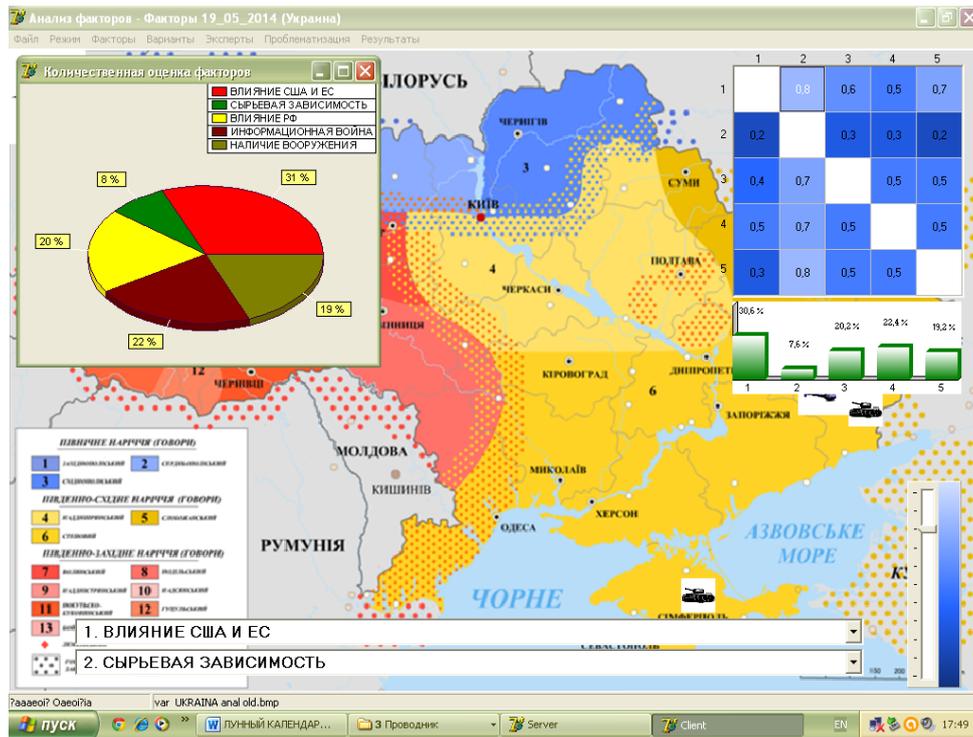


Figure 2 – Screen file illustrating a game session to assess the situation in Donbass

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INNOVATION - METHODOLOGICAL INTEGRITY OF REQUIREMENTS FROM THE ARCHITECTONICS OF THE SOCIOTECHNICAL FUTURE

1. Innovation - a crisis of perception and terminology

Innovation is one of the first topics to come to the attention of both aspiring researchers and academics with degrees in economics and technology. In addition, innovations are included in the zone of interests of corporations and states, which are obliged to operate with this term in their policies. But paradoxically, the essential awareness of innovation is still extremely vague and far from perfect - the number of publications does not translate into an increase in the quality of understanding of the phenomenon in question.

«Guidelines for Collecting and Interpreting Innovation Data» (The Oslo Manual) for more than 30 leading countries of the world (except China) since 1992 defines the content of the term innovation. In the latest edition (fourth edition, 2018), innovation is «new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and has been made available to potential users (product) or brought into use by the unit (process)».

The criterion of novelty as “improvement” is simplified to a primitive one - a minor change (for example, painting) of a minor subsystem can already formally be