

# Cognitive Intellect Psychology and Synthesis of Tests for the Selection of the Operative Personnel

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**Abstract** - This paper describes the way of psychophysiology factors influence on the operator decision making process.

**Keywords** - Intellect, cognitive psychology, operative activity, touch-control.

## I. INTRODUCTION

Modern production – is a difficult integrated human-machine controlled systems, management strategies that are entered in the CAM structure, in the database and professional skills of man-operator. There are several tasks in the system hierarchy that are fixed by a man-operator: control of the dynamic state; forming of coordinating actions for the support of the target functioning of the system; management and adjustment of technological processes is in the normal modes and emergency situations.

The operator becomes the integral intellectual block of control processor in such systems. A reliability of the system functioning depends on him or her. The characteristic of such systems is a division of information load in accordance with the target tasks, that requires data stream processing of different information meaningfulness, detection of the characteristic of behavior, the system of the relatively aim, the forming of decisions for the system co-ordination of motion in the direction of the target area. These processes and decision procedures increase mental tension of the operator that can be a reason of wrong risky decisions. That is, in accordance with a situation, the cost of error, committed by the operator, increases. It forms the complex of requirements for the operator: his level of intelligence and psychophysiological descriptions [1].

## II. PROBLEM

The most important factor of the operator's work in the integrated systems is the level of intelligence, as a basic element of perception process and working data stream processing and situation images.

The operator perceives signals about the system status and external situation through the sensory system and processes in a brain neurostructures with the purpose of forming the situation image in the target space of the integrated system. Under conditions of emergency situations in anthropogenic structures, emergency service units and multifrequency network are in different coordinates that have the separate power, resource and productive structure, and separate informatively administrative structure, the situation sharply becomes complicated for the acceptance of coordination and management decisions, especially in emergency states. These conditions accordingly form requirements to the operators' and managers' intelligence and the psychophysiological descriptions according to their abilities and psychological firmness [1-3].

Here is the list of requirements and abilities that opr needs for decision making:

- The spatial assessment of the situations requires: sensory sensitiveness; sharp reaction for sound and auditory image and minimizations of reaction time; effective forming of signs and threats.
- The assessment of situations in the anthropogenic system requires: implementation of logic-mathematical operations, geometrical and algebra transformations during the images forming; finding the factors and signs of cause-effect connections; rapid identification of the dynamic scenes development, finding the signs complex and the parameter estimation of dynamic processes; ability to use boolean operations, discriminator, input procedures, generation of hypotheses about the possible development of events; making plans and decisions, the choice of alternative actions, ability to build in the imagination trees, links, chains, columns, graphs, motion paths to the aim.
- The construction of strategy variants and behaviour tactic on basis of task-oriented actions provides ability: to build optimum chains and plans of actions with the minimization of risk; to estimate the threat parameters and forecast their influence on the level of the accident rate and dynamics of the situation development; the ability to realize action tactics under conditions of direct threats.

## III. CONCLUSION

Cognitive model – is the metaphor, based on observations and conclusions done from these observations. It describes how structured and unstructured information is manifested, saved and used. The cognitive model is the result and factor of observations by the task-oriented system (by the intellectual agent) which structures the cognitive model (people's thinking) for the purpose of its understanding in the process of cognition and forming of decisions and actions as the reaction on the situation and the action of raising factors.

The logical-cognitive chains of script development of events describe the course of events in terminal time in operator's imagination. The operator forms a purposeful decisions in order to manage objects in the system structure.

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