



# CHAPTER X

## SDP-PSYCHOPHYSIOLOGICAL DIAGNOSTICS SYSTEM

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### **1. Introduction**

Until recently psychological diagnostics referred only to those fields of science or social life which defined the kind and level of disfunction or pathology – in the generally understood psychomotoric sphere of the individual. The participation of psychological knowledge was especially present in medicine, education and upbringing processes.

However, with the development of civilisation and rapid technological progress the broadly understood psychological diagnostics has become one of the basic selection tools enabling the definition:

- which psychophysiological factors are useful (sometimes even indispensable) and which hinder (or completely prevent) performing particular activities
- the satiation level of a certain feature in an individual subject to diagnosis (selection)

It turned out that there is a huge demand for the so-used psychological knowledge and there is a wide range of its use. New specializations have appeared: psychology of labour,

communication psychology, sport psychology, legal and police psychology, military and even managerial psychology.

A wide variety of different consultation points, advisory companies and training teams have been established. Though, at the same time no information has been recorded about the appearance of research teams aiming at elaboration and popularization of diagnostic tools adapted to contemporary conditions and functional needs.

It is not possible to make a reliable selection of people to run a function that requires special skills or psychophysiological efficiency without diagnostic tools that do not only take into account the specification of the function but also the rapid technological and civilizational progress as well as the accumulation of increasing amount of tasks (activities) in a time unit.

## **2. Basic assumptions**

In the SDP system an attempt has been made to concentrate into one information stream:

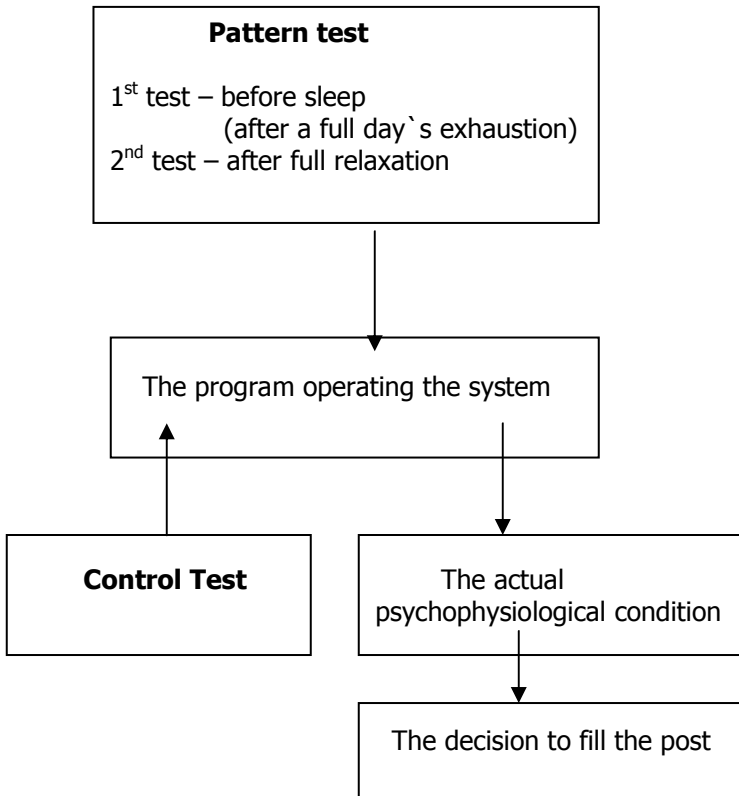
- data from the interview
- the quality of mental processes
- the quality of memory and concentration
- psychomotoric ability
- physiological parameters
- the results of research done

The person qualified for a certain position is subject to a double test:

- after a full day`s exhaustion
- after full relaxation (+ sleep)

With the help of the operating program an average pattern of psychophysiological conditions is prepared. Thanks to the information acquired in this way the program operating the system confronts the pattern condition with the actual condition defined on the basis of the pattern test.

The proposed SDP system is illustrated with the following diagram:

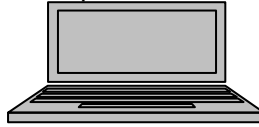


### 3. The set of diagnostic tools

The system consists of three basic elements:

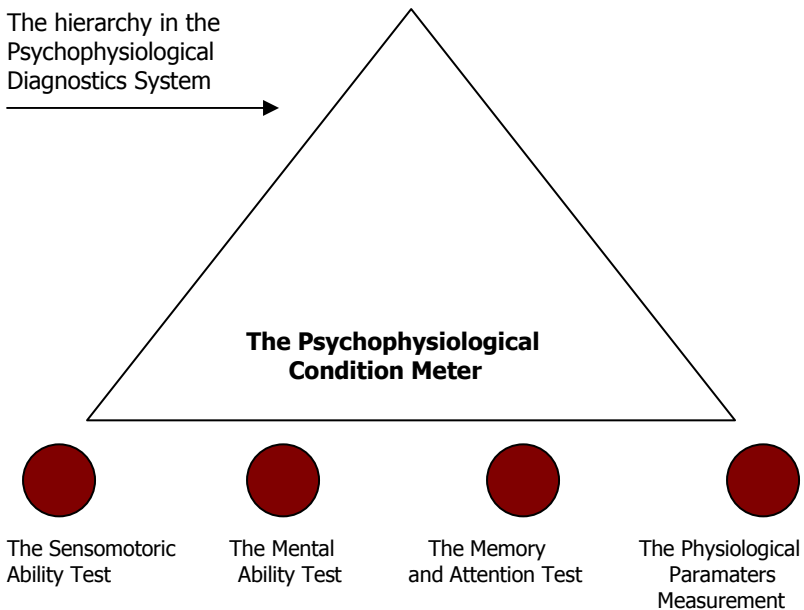
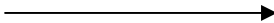
- a portable or desktop PC
- the operating program
- The Psychophysiological Condition Meter

Both the pattern and the control test are run with the use of the set of tests placed in the processor of the device.



Personal Computer

The hierarchy in the  
Psychophysiological  
Diagnostics System



#### 4. Tested Areas

##### The Sensomotoric Ability Test

It enables the definition of visual-motoric coordination with measuring time parameters at the same time.

##### The Mental Ability Test

It allows the definition of the current potential of mental activity.

### The Memory and Attention Test

It defines current CUN abilities applying to memory and attention.

### The Physiological Parameters Measurement

It enables monitoring of the current physiological parameters of the person tested.

## **The components**

- addition test
- numbers test
- lines test
- pair association test
- associated numbers test
- reactions parameters meter
- visual-motoric coordination meter
- physiological parameters meter

## **The use**

Considering its simplicity of use and the possibility of development and the addition of another tests, The Psychophysiological Diagnostics System can be used in those areas of human activity where there is a need for the accurate and reliable diagnosis of actual psychophysiological abilities of a particular person. It especially refers to people employed in emergency services, marine and air forces, people employed as property guards or safeguards and also special vehicles drivers as well as their trainers.

The clarity of using the system allows getting the hold of basic functions and their use in a relatively short time.

Additional advantages are the following:

- the possibility of multiple use of the tests – the variable of acquiring skills has been limited to minimum
- the repetitiveness of tests
- the possibility of running tests not only in laboratory conditions

- the minimalizations of disturbing variables of linguistic and cultural character
- the possibility of the system modification according to the users' needs

## 5. About the origin

The presented system is the result of cooperation between two firms: Psychological-existential Group **Psychotronics** in Tychy, which deals with diagnostics and production of psychological devices, and **EIEWIN** from Gliwice, the manufacturer of electronic measurement devices, mainly for industry.

The specific character of psychological diagnostics – especially its interdisciplinary character- made it necessary for us to verify the device by a team of experts in the field of labour and clinical medicine: an ophthalmologist, laryngologist, neurologist, anaesthetizer and physiologist. Their valuable remarks together with psychological knowledge allowed the implementation of a number of changes of functional character.

At the same time we express hope that the cooperation that we started with academic centres will enable a solid verification of the proposed system.

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The authors of the system declare permanent work on the improvement of the tools and methods used in the system. However, the most essential factor of success in the realization of every enterprise is a close cooperation with its users.