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## THE APPLIED DEVELOPMENTS DIRECTION

### “COGNITIVE MODELING

IN THE BIOLOGICAL AND MEDICAL SCIENCES” (“NBME”)  
OF “THE SRI “SFA CMT” OF “THE RA(N)S” NAMED AFTER V.N. VENIAMINOV”

The developed “The applied developments direction  
“Cognitive modeling in the biological and medical sciences”” (“NBME”)  
treats to the applied developments divisions  
of “The scientific-research institute “System and financial analysis  
based on cognitive modeling technology” of “The RA(N)S” named after V.N. Veniaminov”  
 (“The SRI “SFA CMT” of “The RA(N)S” named after V.N. Veniaminov” – The SRI) as the first SRI  
in structure of “The SIO “Academy of cognitive natural sciences”” (“The SIO “ACNS””),  
an additional component of science and education system of the modern country  
for creation, distribution and use of the main and derivative  
scientific results of the cognitive modeling technology (CMT) (www.vetrovan.(spb.)ru)  
[see the applied developments directions and scientific-researches laboratories of The SRI]:  
1) it is executed by the principle of “administrative-economy submission”;  
2) works in several main directions, which allow to provide  
development of the applied main and derivative scientific results  
(my second report on SRW from 2006-2008(9) y. was submitted  
to “The SPbSETU “LETI”” and The Government of The RF  
for the translation, carrying out of int. action and receiving of “The Nobel Prize”);  
3) includes several various main divisions:  
I. “The scientific-researches laboratory  
“The research of applications of the biology, ecology and physiology of plants”” (“SBE”)  
the applied developments in area  
“Applications of biology” –  
usage of theory of methods and equipment of biological researches,  
usage of theory of plants biology,  
usage of theory of molecular biology of plants,  
usage of theory of plants bio-physics, usage of theory of plants cytology,  
usage of theory of plants embryology, usage of theory of plants genetics,  
usage of theory of plants virology, usage of theory of plants micro-biology,  
usage of theory of plants botany, usage of theory of plants physiology,  
usage of theory of plants zoology, usage of theory of plants ecology,  
usage of theory of plants anthropology,  
usage of theory of communication of physiology of plants, person and animals,  
usage of theory of communication of morphology of plants, persons and animals,  
usage of theory of plants immunology, usage of theory of plants pharmacology,  
usage of theory of plants toxicology,  
usage of theory of plants radiation biology,  
usage of theory of plants space biology,  
usage theory of plants bionics, usage of theory of plants biological cybernetics,  
usage of theory of plants bio-engineering,  
usage of theory of cognitive modeling technology  
in applications of biology;

*t h e   a p p l i e d   d e v e l o p m e n t s   i n   a r e a*  
***“Applications of environment preservation and plants ecology”*** –  
usage of theory and methods of studying of environment preservation,  
usage of theory of ecological bases of use of natural resources,  
usage of theory of international cooperation,  
usage of theory of environmental contamination,  
usage of theory of pollution control,  
usage of theory of pollution and protection of atmosphere,  
usage of theory of pollution,  
usage of theory of protection of land waters, seas and oceans,  
usage of theory of soils protection, usage of theory of bowels protection,  
usage of theory of ecological bases of plants live ability,  
usage of theory of influence of anthropogenous changes of environment  
on health and vegetative potential of plants,  
on natural ecosystems condition, populations and organisms of flora,  
usage of theory of flora protection,  
usage of theory of anthropogenous influence on landscape,  
usage of theory of protection and optimization of landscape,  
usage of theory of reserved affair,  
usage of theory of protected natural territories and water areas,  
usage of theory of acts of nature and accidents of anthropogenous origin,  
usage of theory of ecological safety,  
usage of theory of rational use of natural resources,  
usage of theory of reproduction of natural resources,  
usage of theory of preservation of environment and natural resources  
in separate regions and countries,  
usage of theory of waste management,  
usage of theory of small waste and without waste technology,  
usage of theory of protection against of noise, vibration,  
electrical and magnetical fields and radiations,  
usage of theory of cognitive modeling technology  
in applications of preservation of environment and ecology of plants;  
*t h e   a p p l i e d   d e v e l o p m e n t s   i n   a r e a*  
***“Applications of medicine and public health services”*** –  
usage of theory of medical-biological disciplines,  
usage of theory of medical materials, usage of theory of means and products,  
usage of theory of medical technics,  
usage of theory of clinical medicine, usage of theory of pharmacology,  
usage of theory of hygiene, usage of theory epidemiology,  
usage of theory of other branches of medicine and public health services,  
usage of theory of social hygiene,  
usage of theory of organization and management of public health services,  
usage of theory of cognitive modeling technology  
in applications of medicine and public health services].

II. "The scientific-researches laboratory  
"The research of applications of the bio-technology, bio-medicine,  
ergonomics and labor safety of organic individuals" ("SB") (\*)  
"The applied developments in area  
"Applications of bio-technology" (\*) –  
 usage of theory of raw material and products for bio-technological manufacture,  
 usage of theory of bio-technological processes and devices,  
 usage of theory of cellular engineering,  
 usage of theory of technological bio-energetics,  
 usage of theory of genetic engineering,  
 usage of theory of enzymology engineering,  
 usage of theory of immuno-bio-technological methods of analysis,  
 usage of theory of other problems of bio-technology,  
 usage of theory of cognitive modeling technology  
 in applications of physical-chemical bio-technology and genetic engineering,  
 usage of theory of modeling of desoxyribonucleic acid structure  
 based on multilevel cognitive cylinder;  
"The applied developments in area  
"Applications of bio-medicine and public health services" (\*) –  
 usage of theory of medical-biological disciplines,  
 usage of theory of bio-medical materials, means and products,  
 usage of theory of bio-medical technics,  
 usage of theory of clinical bio-medicine, usage of theory of bio-pharmacology,  
 usage of theory of bio-hygiene and bio-epidemiology,  
 usage of theory of other branches of bio-medicine and public health services,  
 usage of theory of social bio-hygiene,  
 usage of theory of organization and management of public health services,  
 usage of theory of modified model of reduced eye,  
 usage of theory of modified model of reduced ear,  
 usage of theory of software for automation of research tasks  
 of physiological, psychological and linguistical parameters  
 of parametrical cognitive models block,  
 usage of theory of statistical substantiation  
 of practical use of received results,  
 usage of theory of physiological, psychological and linguistical factors influencing  
 to efficiency of functioning of information-educational environment  
 and increase of productivity of automated training system  
 with properties of adaptation based on cognitive models,  
 usage of theory of organization and plan of carrying out of experiment,  
 usage of theory of research of physiological, psychological and linguistical  
 parameters of cognitive models of subject of training and means of training,  
 usage of theory of preliminary processing of a posteriori results of diagnostics,  
 usage of theory of choice of statistical analysis methods of generated data sets,  
 usage of theory of analysis of dynamics of productivity of bio-medicine and public health services,  
 usage of theory of dispersion, regression, discriminant, cluster analysis,  
 multivariate scaling, factor analysis, bibliographical lists,  
 usage of theory of the complex analysis of modified model of reduced eye  
 for research of visual acuity, field of vision, color perception and other parameters  
 in Descartes space of the 2 and 3 coordinates,  
 usage of theory of the complex analysis of modified model of reduced ear  
 for research of absolute sensitivity and thresholds of sensitivity  
 in Descartes space of the 2 and 3 coordinates;  
"The applied developments in area  
"Applications of labor safety" (\*) –  
 usage of theory of organization and management of labor safety,  
 usage of theory of working conditions, usage of theory of industrial sphere,  
 usage of theory of safety precaution,  
 usage of theory of professional illnesses and their preventive support,  
 usage of theory of accidents on manufacture and their prevention,  
 usage of theory of work capacity, usage of theory of work capacity examination,  
 usage of theory of labor safety on workers categories,  
 usage of theory of work safety on manufactures of increased danger,  
 usage of theory of cognitive modeling technology  
 in applications of labor safety I.  
 The applied developments directions and scientific-researches laboratories of The SRI  
 allow to develop the main and derivative scientific results of CMT.