

“Ministry of education and science of The RF”

“The SIO "Academy of cognitive natural sciences””

**The fundamental scientific researches branches
of “The SRI "SFA CMT" of "The RA(N)S"
named after V.N. Veniaminov”**

Collection of scientific reports

Saint-Petersburg city
2016 y.

Vetrov A.N. The fundamental scientific researches branches of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov": Collection of scientific reports on the rights of monography ("Philosophy" ("Physical-mathematical sciences", "Technics" and "Economics")) 2016 y. – SPb.: "The SIO "Academy of cognitive natural sciences"", 2016. – 43 p.

In collection of scientific reports on the rights of monography presented immediate the fundamental scientific researches branch "Cognitive modeling in the mathematical sciences" ("OMN") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov", the fundamental scientific researches branch "Cognitive modeling in the physical sciences" ("OFN") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov", the fundamental scientific researches branch "Cognitive modeling in the nanotechnologies and information technologies" ("ONIT") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov", the fundamental scientific researches branch "Cognitive modeling in the exact sciences" ("OEMMPU") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov", the fundamental scientific researches branch "Cognitive modeling in the industry and chemical sciences" ("OHNM") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov", the fundamental scientific researches branch "Cognitive modeling in the biological sciences" ("OBN") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov", the fundamental scientific researches branch "Cognitive modeling in the physiology, fundamental medicine and public health services" ("OFFM") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov", the fundamental scientific researches branch "Cognitive modeling in the sciences about The Earth" ("ONZ") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov", the fundamental scientific researches branch "Cognitive modeling in the social sciences" ("OON") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov", the fundamental scientific researches branch "Cognitive modeling in the global problems and international relations" ("OGPMO") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov", the fundamental scientific researches branch "Cognitive modeling in the historical-philological sciences" ("OIFN") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov", the fundamental scientific researches branch "Cognitive modeling in the sports sciences" ("OSN") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov" and the fundamental scientific researches branch "Cognitive modeling in the military sciences" ("OVN") of "The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov".

Intended for scientists, staff of The SRI, teachers and students of The HEIs, and also qualified specialists-experts on scientific specialties:
 05.13.01 – "The system analysis, control and information processing" (technics),
 05.13.06 – "Automation of technological processes and manufactures" (industry),
 05.13.10 – "Control and computer science in social systems" (technics),
 19.00.02 – "Psycho-physiology of perception" (technics and medicine),
 19.00.03 – "Psychology of work, engineering psychology and ergonomics" (psychology),
 08.00.10 – "Finance, monetary circulation and credit" (economics and finances),
 08.00.12 – "The accounting and statistics" (accounting documents of (credit) organizations),
 08.00.13 – "Mathematical and instrumental methods of economics" (the financial analysis),
 01.02.01 – "Theoretical mechanics" (modeling of hybrid systems with difficult structure),
 02.00.04 – "Physical chemistry" (multi-nucleus chemical elements and nuclear polymers)
 and 03.00.03 – "Molecular biology" (modeling of desoxyribonucleic acid).

on the rights of monography

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THE FUNDAMENTAL DEVELOPMENTS BRANCH

“COGNITIVE MODELING IN THE MATHEMATICAL SCIENCES” (“OMN”) OF “THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV”

The developed “The fundamental developments branch “Cognitive modeling in the mathematical sciences”” (“OMN”) treats to the fundamental 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 fundamental developments branches and departments 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 fundamental 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 fundamental developments department “The theory of the mathematics and complex system analysis based on cognitive modeling technology”” (“SM”) (*) [*the fundamental developments in area “The theoretical mathematics” (*)*] – theory of mathematical logic, theoretical bases of mathematics, theory of numbers, theory of algebra, theory of topology, theory of geometry, theory of the mathematical analysis, theory of functions valid variables, theory of functions of complex variables, theory of ordinary differential equations, theory of differential equations with private derivatives, theory of integrated equations, theoretical mathematical models of objects, processes and phenomena of natural and technical sciences, theory of equations of mathematical physics, theory of variational calculus, mathematical theory of optimum control, theory of the functional analysis, theory of calculation mathematics, theory of probability and mathematical statistics, theory of the combinatory analysis, theory of graphs, theoretical mathematical cybernetics, theory of ways of representation of structure of cognitive models and problem environments, theoretical basis of parametrical cognitive models block, theory of cognitive modeling technology in theoretical mathematics;

the fundamental developments in area "The theoretical complex system analysis" ()* – theory of general questions of the complex system analysis, theory of tendencies, dependences and laws of the complex system analysis of difficult objects, processes and phenomena, theory of cognitive modeling technology with dynamic cloning, verification and subverification, theory of iterative cycle and technique of use of cognitive modeling technology for the complex system analysis of difficult objects, processes and phenomena, theory of parametrical cognitive models block for the complex system analysis and increase of efficiency of functioning of difficult objects, processes and phenomena, theory of structure of parametrical cognitive models of the 0th, 1st, 2nd and 3rd generations, theory of ways of representation of structure of cognitive models and problem environments: formal classical of the 0th generation (logical and production models), nonformal classical of the 0th generation (semantic network, frame network and ontology), formal new of the 0th generation (calculus of theory of sets and corteges on domains and innovative calculus of theory of sets and graphs), nonformal new of the 0th generation (multilevel structural scheme and multilevel encapsulated pyramids combining theory of graphs and theory of sets), flat of the 1st generation (cognitive circle and cognitive disc), volumetric of the 1st generation (cognitive cylinder, cognitive cone and cognitive sphere), flat and volumetric of the 2nd generation (one-, two-, three-, four-, five- and more cognitive circle, cognitive disc, cognitive cylinder, cognitive cone and cognitive sphere), hybrid of the 3rd generation (combinations of the existing cognitive models), theory of algorithms of formation of difficult cognitive models of the 0th, 1st, 2nd and 3rd generations, theory of techniques of research of parameters of difficult cognitive models of the 0th, 1st, 2nd and 3rd generations, theory of algorithms of processing of a posteriori data of the complex system analysis of problem spheres, theory of software for automation of research tasks, theory of statistical substantiation of practical use of received results, theory of factors influencing to efficiency of functioning of difficult objects, processes and phenomena, theory of organization and plan of carrying out of experiment, theory of research of cognitive models parameters, theory of preliminary processing of a posteriori results of diagnostics, theory of choice of the statistical analysis methods of generated data sets, theory of analysis of productivity dynamics of difficult object, process and phenomena of research, theory of dispersion, regression, discriminant, cluster analysis, multidimensional scaling, factor analysis and bibliographical lists, the theoretical complex system analysis of basic rocket engine, the first, the second, the third and the fourth rocket engine of launch vehicle, the theoretical complex system analysis of multivariate code device (access monitoring systems), the theoretical complex system 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, the theoretical complex system 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 theoretical complex system analysis of chemical element with 1, 2, 3, 4, 5 and more nucleus, the theoretical complex system analysis of difficult multidimensional hurricane and other difficult objects, processes and phenomena].

II. “The fundamental developments department
“The theory of the cybernetics and (Cognitive) computer science” (“SPMI”) (*)
*[the fundamental developments in area
“Theoretical cybernetics”* – theory of automatic control systems, theory of modeling, theory of cybernetic control systems, theory of information, theory of artificial intelligence, theory of discrete (final) automatic devices and formal languages, theory of reliability, theory of the system analysis, theory of cognitive modeling technology in theoretical cybernetics;
*the fundamental developments in area
“Theoretical Computer science”* – theory of Computer science, theory of organization of information work, theory of documentary information sources, theory of analytical-synthetical processing of documentary information sources, theory of information search, theory of information service, theory of technical means of support of information processes, theory of cognitive modeling technology in theoretical Computer science;
*the fundamental developments in area
“Theoretical Cognitive computer science” (*)* – theory of modified stratified-step model of perception (psycho-physiology of perception), processing (cognitive psychology) and understanding (cognitive linguistics) of information fragments content, theoretical bases of Cognitive computer science and cognitive modeling technology in technical, economical, physical-mathematical and other sciences, theoretical bases of formation of parametrical cognitive models block for the system analysis of information-educational environments (cognitive models of subject of training and means of training), theoretical bases of formation of parametrical cognitive models block for the financial analysis of (credit) organizations (cognitive models for the vertical, horizontal and trend financial analysis), theoretical bases of formation of parametrical cognitive models block for the complex analysis of objects, processes and phenomena in Cognitive computer science, theory of ways of representation of structure of cognitive models and problem environments (formal and nonformal classical and new of the 0th generation, flat and volumetric of the 1st generation and 2nd generation and hybrid of the 3rd generation), theory of adaptive automation means of information-educational environment (basic and applied diagnostic module, electronic textbook, laboratory practical work, electronic dean, electronic library and others), theory of technical means of adaptive information interaction support (adaptive representation of sequence of information fragments processor, question-answers structures sequence processing processor, linguistic processor and other processors), theory of technical means of the financial analysis support (automation means of formation of working plan of accounts based on normative-regulated plan of accounts of the accounting; automation means of formation of accounting balance and report about profits and losses of (credit) organization and enterprise, automation means of the vertical, horizontal and trend financial analysis of (credit) organization and enterprise based on diverse analytical coefficients system), theory of technical means of the complex analysis support (automation means of formation and research of cognitive circle, cognitive disc, cognitive cylinder, cognitive cone, cognitive sphere, one-, two-, tree-, fore-, five- and more cognitive sphere and others)].

The fundamental developments branches and departments of The SRI allow to develop the main and derivative scientific results of CMT.

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THE FUNDAMENTAL DEVELOPMENTS BRANCH

“COGNITIVE MODELING IN THE PHYSICAL SCIENCES” (“OFN”)
OF “THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV”

The developed “The fundamental developments branch
"Cognitive modeling in the physical sciences"” (“OFN”)
treats to the fundamental 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
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for the translation, carrying out of int. action and receiving of “The Nobel Prize”);
3) includes several various main divisions:
I. “The fundamental developments department
"The theory of the physics, astronomy and space researches”” (“SOFA”) (*)
*[the fundamental developments in area
“Theoretical physics” (*)* –
theory of questions and general problems of physical experiment,
theory of physics of elementary particles, theory of fields,
theory of high energy physics, theory of nuclear physics,
theory of physics of gases and liquids,
theory of thermo-dynamics and statistical physics, theory of physics of firm bodies,
theory of physics of plasma, theory of physics of atom and molecule,
theory of optics, theory of laser physics, theory of radio-physics,
theory of physical bases of electronics, theory of acoustics,
theory of cognitive modeling technology
in theoretical physics,
theory of cognitive models of interaction between
elementary particles and firm bodies, fields, liquids and gases,
theory of cognitive model of modified
volumetric planetary model of atom named after N.H.D. Bor,
theory of cognitive models of temperature areas of plasma of atom and molecule,
theory of cognitive model of eye optical environment as optical device,
theory of cognitive model of ear acoustical environment as acoustical device,
theory of cognitive model of waves distribution in environment;

the fundamental developments in area “Theoretical astronomy” ()* – theory of astronomy and heavenly mechanics, theory of astrometry and astro-physics of The Solar system, The Sun, stars, fogs, interstellar environment and star systems, theory of cosmology, theory of observatories, tools, devices and methods of astronomical supervision, theory of cognitive modeling technology in theoretical astronomy, theory of cognitive models of relative positioning of 1, 2, 3, 4, 5 and more galaxies, planets, stars and satellites, The Earth, The Sun and others;

the fundamental developments in area “Theoretical space researches of The Earth, The Sun and planets” ()* – theory of general questions of space researches of The Earth, The Sun and planets, theory of devices and methods of fundamental scientific researches of space environment, theory of planning and realization of starts of space vehicles and artificial heavenly bodies, theory of uncontrol movement of space vehicles and artificial heavenly bodies, theory of control of movement of space vehicles and artificial heavenly bodies, theory of space technics and technology (rocket engines of new generation), theory of safety and medical-biological problems of space flights, theory of use of space systems for connection and navigation, theory and problems of extraterrestrial territories discovery and prospects of astronautics, theory of astronomical objects research by space means, theory of geo-physical fundamental researches by space means, theory of research of The Earth from space (means of research of new generation), theory of cognitive modeling technology in theoretical space researches of The Earth, The Sun and planets, theory of cognitive models of gravitational and other interactions between 1, 2, 3, 4, 5 and more artificial space objects, satellites, galaxies, planets, stars, The Earth and The Sun, theory of cognitive models of work of basic rocket engine, the first, the second, the third and the fourth rocket engine of launch vehicle and others].

II. “The fundamental developments department “The theory of the nuclear physics and physics of atomic nucleus” (“SYF”) (*)

the fundamental developments in area “Theoretical nuclear physics” ()* – theory of nuclear raw materials and fuel, theory of isotopes synthesis, theory of isotopes and ionization radiations, theory of nuclear reactors, theory of thermal-nuclear reactors, theory of radiations action and protection against them, theory of nuclear explosions, theory of nuclear fuel processing and waste disposal, theory of cognitive modeling technology in theoretical nuclear physics, theory of cognitive models of difficult chemical elements structure with 1, 2, 3, 4, 5 and more nucleus (nuclear polymers), theory of cognitive model of modified volumetric principle named after W.E. Pauli for studying electronic clouds within limits of power levels, theory of cognitive model of modified planetary model of atom named after N.H.D. Bor and others].

The fundamental developments branches and departments of The SRI allow to develop the main and derivative scientific results of CMT.

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THE FUNDAMENTAL DEVELOPMENTS BRANCH
“COGNITIVE MODELING IN THE NANOTECHNOLOGIES
AND INFORMATION TECHNOLOGIES” (“ONIT”)

OF “THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV”

The developed “The fundamental developments branch
"Cognitive modeling in the nanotechnologies
and information technologies"” (“ONIT”)
treats to the fundamental 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
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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 fundamental developments branches and departments of The SRI]:
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(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 fundamental developments department
"The theory of the electronics, radio-engineering and connection”” (“SVLTSEB”)
*[the fundamental developments in area
“Theoretical electronics and radio-engineering”* –
theoretical bases of electronical technics, theory of radio-engineering,
theory of materials for electronics and radio-engineering,
theory of technology and equipment for electronical and radio-engineering manufacture,
theory of designing and constructing
of electronical devices and radio-electronical equipment,
theory of electrical-vacuum and gas-discharge devices and units,
theory of accelerators for charged particles and plasma, theory of solid-state devices,
theoretical bases of quantum electronics, theory of holography,
theoretical bases of crio-electronics, theory of radio-electronical circuits,
theory of radio-waves distribution, theory of antennas, theory of wave transports,
theory of elements of micro-wave techniques, theory of radio-transmission and radio-receiving devices,
theory of radio-engineering systems of sounding, location and navigation,
theory of television (TV) technics, theory of record and reproduction of signals,
theory of electrical-acoustics, theory of ultra-sonic and infra-sonic technics,
theory of infra-red technics,
theory of units, details and elements of radio-electronical equipment,
theory of devices for radio-engineering measurements,
theory of systems and units of information display,
theory of cognitive modeling technology
in theoretical electronics and radio-engineering;

t h e f u n d a m e n t a l d e v e l o p m e n t s i n a r e a
“ T h e o r e t i c a l c o n n e c t i o n ” –
theory of connection, theory of designing and constructing of connection devices,
theory of technology and equipment for assembly and adjustment
of connection equipment, systems of transfer and communication lines,
theory of multichannel connection, theory of networks and centres of communication,
theory of services and good turns of connection,
theory of telegraph connection and equipment,
theory of systems and equipment of data transmission,
theory of tele-information services and equipment,
theory of tele-communication connection and equipment,
theory of transfer systems of moving images and sound,
theory of facsimile connection and equipment,
theory of radio-communication connection and radio-broadcasting,
theory of hyper-optic (LED) connection and equipment, theory of TV,
theory of optical connection in free environment and equipment,
t h e o r y o f p o s t c o n n e c t i o n ,
theory of cognitive modeling technology
in theoretical connection and terminal equipment of data transmission].

II. “The fundamental developments department
“The theory of the automatics, computer engineering and system analysis
based on cognitive modeling technology” (“SITA”) (*)

[t h e f u n d a m e n t a l d e v e l o p m e n t s i n a r e a
“Theoretical automatics and computer engineering” –
theory of automatic control, theoretical bases of programming,
t h e o r e t i c a l b a s e s o f c o m p u t e r e n g i n e e r i n g ,
theory of elements, units and devices of automatics and computer engineering,
theory of input-output devices, theory of memory devices,
theory of technology and equipment for manufacture
of automatics means and computer engineering,
theory of keyboard and calculating-tabulating machines,
t h e o r y o f a n a l o g c o m p u t e r s (A P C) ,
theory of digital computers and computer complexes (DPC),
t h e o r y o f a n a l o g - d i g i t a l (h y b r i d)
c o m p u t e r s a n d c o m p u t e r c o m p l e x e s ,
theory of computer centres (CPC), theory of computer networks (NPC),
theory of software of computers, complexes and networks,
theory of systems of automatic measurement, regulation and control,
theory of tele-control and tele-measurement systems,
theory of automated control systems of technological processes,
theory of automated systems of organizational management,
theory of designing automation, theory of scientific researches automation,
t h e o r y o f c o g n i t i v e m o d e l i n g t e c h n o l o g y
in theoretical automatics and computer engineering;

t h e f u n d a m e n t a l d e v e l o p m e n t s i n a r e a
*“ T h e t h e o r e t i c a l s y s t e m a n a l y s i s ” (*)* –
theory of tendencies, dependences and laws
of the system analysis of objects, processes and phenomena,
theory of cognitive modeling technology
with dynamic cloning, verification and subverification,
theory of iterative cycle and technique of use
of cognitive modeling technology,
theory of parametrical cognitive models block
for the system analysis of information-educational environments
and increase efficiency of functioning
of automated training system
with properties of adaptation based on cognitive models
(cognitive models of subject of training and means of training),
theory of ways of representation of structure of cognitive models and problem environments:
formal classical of the 0th generation (logical and production models),
nonformal classical of the 0th generation (semantic network, frame network and ontology),
formal new of the 0th generation (calculus of theory of sets and corteges on domains
and innovative calculus of theory of sets and graphs),
nonformal new of the 0th generation (multilevel structural scheme
and multilevel encapsulated pyramids combining theory of graphs and theory of sets),
flat of the 1st generation (cognitive circle and cognitive disc),
volumetric of the 1st generation (cognitive cylinder, cognitive cone and cognitive sphere),
flat and volumetric of the 2nd generation (one-, two-, three-, four-, five- and more cognitive circle,
cognitive disc, cognitive cylinder, cognitive cone and cognitive sphere),
hybrid of the 3rd generation (combinations of the existing cognitive models),
theory of algorithm of formation of cognitive model structure,
theory of technique of research of cognitive model parameters,
theory of algorithm of analysis of a posteriori results of research,
theory of adaptive automation means of information-educational environment
(basic and applied diagnostic module, electronical textbook,
laboratory practical work, electronical dean, electronical library and others),
theory of technical means of adaptive information interaction support
(adaptive representation of sequence of information fragments processor,
question-answers structures sequence processing processor,
linguistical processor and other processors),
theory of statistical substantiation of practical use of received results,
theory of factors influencing to efficiency of knowledge formation
i n i n f o r m a t i o n - e d u c a t i o n a l e n v i r o n m e n t
and efficiency of functioning of objects, processes and phenomena,
theory of organization and plan of carrying out of experiment,
theory of research of cognitive models parameters,
theory of preliminary processing of a posteriori results of diagnostics,
theory of choice of statistical analysis methods of generated data sets,
theory of analysis of productivity dynamics of objects, processes and phenomena,
theory of dispersion, regression, discriminant, cluster analysis,
multidimensional scaling, factor analysis and bibliographical lists].

III. “The fundamental developments department
“The theory of the nano-technologies for the mechanical engineering, instrument making,
polygraphy, reprography and foto-cinema-technics,
easy and food-processing industry,
transport, architecture and construction” (“SNT”) (*)
[the fundamental developments in area
“Theoretical nano-technologies for mechanical engineering” –
 theory of nano-technologies for machines science and details of machines,
 for machine-building materials, for technologies of mechanical engineering,
 for foundry manufacture, for forge-stamp manufacture,
 for assembly manufacture, for cutting materials,
 for electrical-physical-chemical processing,
 for thermal and strengthening powder materials,
 for manufacture of nonmetallic products, for machine-tool construction,
 for robotics, for tool manufacture, for mining mechanical engineering,
 for metallurgical mechanical engineering, for reactor construction, for turbine construction,
 for special power stations, for chemical and oil mechanical engineering,
 for locomotive construction and carriage building, for engine construction, for motor car industry,
 for ship building, for aircraft building, for space technics and rocket building,
 for hoisting-transport mechanical engineering (industry),
 for building and road mechanical engineering, for municipal mechanical engineering,
 for tractor and agricultural mechanical engineering,
 for mechanical engineering of light industry (by types of production),
 for polygraphic mechanical engineering, for mechanical engineering of food-processing industry,
 for mechanical engineering of trade and public catering, for household machines and devices,
 for manufacture of weapon, for other branches of mechanical engineering,
 theory of cognitive modeling technology
 in theoretical nano-technologies for mechanical engineering;
the fundamental developments in area
“Theoretical nano-technologies for instrument making” –
 theory of nano-technologies for theoretical bases of instrument making,
 for general technology of production and equipment in instrument making,
 for designing and constructing of devices,
 for measurement devices of electrical and magnetical sizes (poles),
 for measurement devices of mechanical sizes, for measurement devices of time and frequency,
 for measurement devices of structure and physical-chemical properties of substances and materials,
 for devices of thermal-technical and thermal-physical measurements,
 for measurement devices of acoustical sizes and characteristics,
 for measurement devices of optical and lighting-technical sizes and characteristics,
 for measurement devices of ionization radiations,
 for devices of not destroying control of products and materials,
 for general structural elements,
 units of measuring devices and system, means of organizers (office equipment),
 theory of cognitive modeling technology
 in theoretical nano-technologies for instrument making;

the fundamental developments in area
“Theoretical nano-technologies
for polygraphy, reprography and foto-cinema-technics” –
theory of nano-technologies for polygraphy, reprography and foto-cinema-technics,
theory of cognitive modeling technology
in theoretical nano-technologies for seal (press);
the fundamental developments in area
“Theoretical nano-technologies for light industry” –
theory of nano-technologies for textile industry,
for knitted industry, for clothing industry,
for tanning industry, for fur industry,
for industry of artificial leather and film materials,
for shoe industry, for leather-haberdashery industry,
for bristle-brush manufactures, for manufacture of accessories,
theory of cognitive modeling technology
in theoretical nano-technologies for light industry;
the fundamental developments in area
“Theoretical nano-technologies for food-processing industry” –
theory of nano-technologies for food raw materials and auxiliary materials,
for processes and devices of food manufactures,
for (grain-)elevator and flour(-grinding)-sereals (croup) industry,
for mixed - fodder industry,
for baking of bread and macaroni industry,
for confectionery industry, for sugar industry,
for starched - treacle industry,
for barmy industry, for brewing industry,
for spirituous industry, for high-alcohol drinks industry,
for wine-making (vinous) industry, for soft (without alcohol) drinks industry,
for canning, vegetable drying and food-concentrate industry,
for food-gustatory industry, for tobacco industry,
for meat and bird fancier processing industry,
for manufacture of eggs and egg products,
for dairy (milk) industry, for creamery (butter-fatty) industry,
theory of cognitive modeling technology
in theoretical nano-technologies for food-processing industry;
the fundamental developments in area
“Theoretical nano-technologies for transport” –
theory of nano-technologies for railway transport,
for motor car transport, for water transport,
for air transport, for pipeline transport,
for industrial transport, for urban (municipal) transport,
for interaction of different types (kinds) of transport,
for mixed transportations, for other types (kinds) of transport,
theory of cognitive modeling technology
in theoretical nano-technologies for transport;

t h e f u n d a m e n t a l d e v e l o p m e n t s i n a r e a
“Theoretical nano-technologies for architecture and construction” (*) –
engineering-theoretical bases of construction, architecture,
building materials and products and building constructions,
theory of technology of building-installation works,
theory of technology of production of building materials and products,
m a c h i n e s , m e c h a n i s m s , e q u i p m e n t a n d t o o l ,
used in construction and industry of building materials,
theory of engineering researches in construction,
theory of architectural-building designing,
theory of regional (district) lay-out, theory of town-planning,
theory of objects of construction and engineering support of construction objects,
tendencies, dependences and laws in architecture and construction,
t h e o r y o f c o g n i t i v e m o d e l i n g t e c h n o l o g y
with dynamic cloning, verification and subverification,
theory of iterative cycle and technique of use
o f c o g n i t i v e m o d e l i n g t e c h n o l o g y ,
theory of parametrical cognitive models block
f o r a r c h i t e c t u r e a n d c o n s t r u c t i o n
(buildings and constructions based on cognitive circle, cognitive disc,
cognitive cylinder, cognitive cone and cognitive sphere),
theory of ways of representation of structure of cognitive models and problem environments
(formal and nonformal classical and new of 0th generation,
flat and volumetric of the 1st generation and 2nd generation and hybrid of the 3rd generation),
theory of algorithm of formation of cognitive model structure,
theory of technique of research of cognitive model parameters,
theory of algorithm of analysis of a posteriori results of research,
theory of adaptive automation means of architecture and construction
(automation means of formation and research of cognitive circle,
cognitive disc, cognitive cylinder, cognitive cone, cognitive sphere,
one-, two-, tree-, fore-, five- and more cognitive sphere and others),
theory of statistical substantiation of practical use of received results,
theory of factors influencing to efficiency of construction of buildings and constructions,
theory of organization and plan of carrying out of experiment,
theory of research of parameters of parametrical cognitive models block,
theory of preliminary processing of a posteriori results of diagnostics,
theory of choice of statistical analysis methods of generated data sets,
theory of analysis of productivity dynamics of construction,
theory of dispersion, regression, discriminant, cluster analysis,
multidimensional scaling, factor analysis and bibliographical lists].

The fundamental developments branches and departments of The SRI
allow to develop the main and derivative scientific results of CMT.

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THE FUNDAMENTAL DEVELOPMENTS BRANCH
“COGNITIVE MODELING IN THE EXACT SCIENCES” (“OEMMPU”)
OF “THE SRI “SFA CMT” OF “THE RA(N)S” NAMED AFTER V.N. VENIAMINOV”
The developed “The fundamental developments branch
“Cognitive modeling in the exact sciences”” (“OEMMPU”)
treats to the fundamental 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 fundamental developments branches and departments 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 fundamental 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 fundamental developments department
“The theory of the (theoretical) mechanics and gyroscopes”” (“SM”) (*)
*“The fundamental developments in area
“Theoretical mechanics” (*)* –
theoretical bases, general problems and methods of theoretical mechanics,
theory of general mechanics, theory of mechanics of liquid and gas,
theory of mechanics of deformable firm body,
theory of complex and special sections of the theoretical mechanics,
theoretical bases of cognitive modeling technology in theoretical mechanics,
theoretical bases of formation of parametrical cognitive models block
for the complex system analysis of objects, processes and phenomena of theoretical mechanics,
theory of ways of representation of structure of cognitive models and problem environments:
formal classical of the 0th generation (logical and production models),
nonformal classical of the 0th generation (semantic network, frame network and ontology),
formal new of the 0th generation (calculus of theory of sets and corteges on domains
and innovative calculus of theory of sets and graphs),
nonformal new of the 0th generation (multilevel structural scheme
and multilevel encapsulated pyramids combining theory of graphs and theory of sets),
flat of the 1st generation (cognitive circle and cognitive disc),
volumetric of the 1st generation (cognitive cylinder, cognitive cone and cognitive sphere),
flat and volumetric of the 2nd generation (one-, two-, three-, four-, five- and more cognitive circle,
cognitive disc, cognitive cylinder, cognitive cone and cognitive sphere),
hybrid of the 3rd generation (combinations of the existing cognitive models),
theory of adaptive automation means of research
of objects, processes and phenomena of theoretical mechanics,
theory of technical means of the complex system analysis support
of difficult objects, processes and phenomena of theoretical mechanics
(automation means of formation and research based on cognitive circle,
cognitive disc, cognitive cylinder, cognitive cone, cognitive sphere,
one-, two-, tree-, fore-, five- and more cognitive sphere and others),
theory of statistical substantiation of practical use of received results,
theory of factors influencing to efficiency of functioning
of objects, processes and phenomena of theoretical mechanics,
theory of organization and plan of carrying out of experiment,
theory of research of parameters of parametrical cognitive models block,
theory of preliminary processing of a posteriori results of diagnostics,
theory of choice of statistical analysis methods of generated data sets,
theory of analysis of productivity dynamics
of objects, processes and phenomena of theoretical mechanics,
theory of dispersion, regression, discriminant, cluster analysis,
multidimensional scaling, factor analysis and bibliographical lists;

the fundamental developments in area
“ Theoretical mechatronics ” –
theoretical bases, general tasks and methods of theoretical mechatronics,
theory of general theoretical mechatronics,
theory of mechatronics of liquid, gas and deformable firm body,
theory of complex and special sections of theoretical mechatronics,
theory of automation means and devices of mechatronics,
theory of cognitive modeling technology
in theoretical mechatronics (theory of hygroscope building)].

II. “The fundamental developments department
“The theory of the mechanical-engineering, instrument making and metrology” (“SPMPU”)

[the fundamental developments in area
“ Theoretical mechanical-engineering ” –
theory of mechanical-engineering science and details of machines,
theory of machine-building materials, technology of mechanical-engineering,
theory of foundry manufacture, theory of forge-stamp manufacture,
theory of assembly manufacture, theory of cutting of materials,
theory of electrical-physical-chemistry processing,
theory of thermal and strengthening processing,
theory of furnish of surfaces and drawings of coverings,
theory of manufacture of products from powder materials,
theory of manufacture of nonmetallic products,
theory of machine-tool construction, theory of robotics,
theory of tool manufacture, theory of mining mechanical-engineering,
theory of metallurgical mechanical-engineering,
theory of reactor construction, theory of turbine construction,
theory of special power plants,
theory of chemical and oil mechanical-engineering,
theory of locomotive construction and carriage building, theory of engine construction,
theory of motor car building, theory of ship building, theory of aircraft building,
theory of space technics and rocket building,
theory of hoisting-transport mechanical-engineering,
theory of building and road mechanical-engineering,
theory of communal mechanical-engineering,
theory of tractor and agricultural mechanical-engineering,
theory of mechanical-engineering for light industry,
theory of polygraphic mechanical-engineering,
theory of mechanical-engineering for food-processing industry,
theory of mechanical-engineering for trade and public catering,
theory of household machines and devices, theory of manufacture of weapon,
theoretical bases of other branches of mechanical-engineering,
theory of cognitive modeling technology
in theoretical mechanical-engineering;

the fundamental developments in area "Theoretical instrument making" – theoretical bases of instrument making, theory of general technology of production and equipment in instrument making, theory of designing and constructing of devices, theory of devices for measurement of electrical and magnetical sizes, theory of devices for measurement of mechanical sizes, theory of devices for measurement of time and frequency, theory of devices for measurement of composition (structure) and physical-chemical properties of substances and materials, theory of devices for thermal-technical and thermal-physical measurements, theory of devices for measurement of acoustical sizes and characteristics, theory of devices for measurement of optical and lighting-technical sizes and characteristics, theory of devices for measurement of ionization radiations, theory of devices of not destroying control of products and materials, theoretical bases of general structural elements, units of measuring devices and systems, devices of interface and office equipment means (periphery), theory of cognitive modeling technology in theoretical instrument making;

the fundamental developments in area "Theoretical metrology" – theory of scientific bases and technical means of theoretical metrology and metrological support, theory of state, national and international systems and services of metrology, theory of measurement of separate sizes and characteristics, theory of standard samples of composition (structure) and properties of substances and materials, theory of cognitive modeling technology in theoretical metrology (theory of measurement)].

III. "The fundamental developments department "The theory of the power engineering and electrical engineering" ("SE")

the fundamental developments in area "Theoretical power engineering" – theory of power resources, theory of power (energy) balance, theory of electrical power engineering (industry), theory of thermal-power engineering (industry), theory of thermal-technical engineering, theory of atomic power engineering (industry), theory of hydro-power engineering (industry), theory of helium-power engineering (industry), theory of wind-power engineering (industry), theory of direct transformation of energy, theory of cognitive modeling technology in theoretical power engineering;

the fundamental developments in area "Theoretical electrical engineering" – theory of electrical engineering, theory of electrical-technical materials, theory of electrical machines, theory of electrical devices, theory of transformers and electrical reactors, theory of power electrical condensers, theory of power converting technics, theory of electrical drive, theory of electrical-thermy, theory of electrical-welding equipment, theory of wire and cable, theory of electrical isolators, theory of light engineering, theory of electrical-technical equipment of special purpose, theory of cognitive modeling technology in theoretical electrical engineering].

The fundamental developments branches and departments of The SRI allow to develop the main and derivative scientific results of CMT.

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THE FUNDAMENTAL DEVELOPMENTS BRANCH
"COGNITIVE MODELING IN THE INDUSTRY
AND CHEMICAL SCIENCES" ("OHNM")

OF "THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV"

The developed "The fundamental developments branch "Cognitive modeling in the industry and chemical sciences" ("OHNM") treats to the fundamental 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 fundamental developments branches and departments 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 fundamental 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 fundamental developments department "The theory of the easy, food, forestry and wood processing industry, the architecture and construction, the agriculture, forestry, water, fish economy and aqua-culture" ("SNM") (*)
[the fundamental developments in area "Theoretical light industry" – theory of textile industry, theory of knitted industry, theory of clothing industry, theory of tanning industry, theory of fur industry, theory of industry of artificial leather and film materials, theory of shoe industry, theory of leather-haberdashery industry, theory of bristle-brush manufacture, theory of accessories manufacture, theory of cognitive modeling technology in theoretical light industry; the fundamental developments in area "Theoretical food-processing industry" – theory of food raw materials and auxiliary materials, theory of processes and devices of food-processing manufactures, theory of (grain-)elevator and flour(-grinding)-sereals (croup) industry, theory of mixed-fodder industry, theory of baking of bread and macaroni industry, theory of confectionery industry, theory of sugar industry, theory of starched-treacle industry, theory of barmy industry, theory of brewing industry, theory of high-spirituos industry, theory of high-alcohol drinks industry, theory of wine-making (vinous) industry, theory of soft (without alcohol) drinks industry, theory of canning, vegetable drying and food-concentrate industry, theory of food-gustatory industry, theory of tobacco industry, theory of meat and bird fancier processing industry, theory of manufacture of eggs and egg products, theory of dairy (milk) industry, theory of creamery (butter-fatty) industry, theory of cognitive modeling technology in theoretical food-processing industry;

the fundamental developments in area "Theoretical forestry and wood processing industry" – theory of wood science, theory of forestry-cutting works, theory of forestry transportation, theory of forestry-timber works, theory of technology and equipment for wood processing, theory of forestry-sawmill manufacture, theory of joiner-building products manufacture, theory of manufacture of plywood and plates, theory of furniture manufacture, theory of matches manufacture, theory of wooden container manufacture, theory special wood-processing manufactures, theory of pulp-paper industry, theory of cognitive modeling technology in theoretical wood-processing industry;

the fundamental developments in area "Theoretical architecture and construction" ()* – engineering-theoretical bases of construction, theory of architecture, theory of building materials and products, theory of building constructions, theory of technology of construction-installation works, theory of technology of production of building materials and products, theory of machines and mechanisms, theory of equipment and tool used in construction and building materials industry, theory of engineering researches in construction, theory of architectural-construction designing, theory of regional (district) lay-out, theory of town-planning, theory of objects of construction, theory of engineering support of objects of construction, theory of tendencies, dependences and laws in architecture and construction, theory of cognitive modeling technology with dynamic cloning, verification and subverification, theory of iterative cycle and technique of use of cognitive modeling technology, theory of parametrical cognitive models block for architecture and construction (buildings and constructions based on cognitive circle, cognitive disc, cognitive cylinder, cognitive cone and cognitive sphere), theory of ways of representation of structure of cognitive models and problem environments: formal classical of the 0th generation (logical and production models), nonformal classical of the 0th generation (semantic network, frame network and ontology), formal new of the 0th generation (calculus of theory of sets and corteges on domains and innovative calculus of theory of sets and graphs), nonformal new of the 0th generation (multilevel structural scheme and multilevel encapsulated pyramids combining theory of graphs and theory of sets), flat of the 1st generation (cognitive circle and cognitive disc), volumetric of the 1st generation (cognitive cylinder, cognitive cone and cognitive sphere), flat and volumetric of the 2nd generation (one-, two-, three-, four-, five- and more cognitive circle, cognitive disc, cognitive cylinder, cognitive cone and cognitive sphere), hybrid of the 3rd generation (combinations of the existing cognitive models), theory of algorithm of formation of cognitive model structure, theory of technique of research of cognitive model parameters, theory of algorithm of analysis of a posteriori results of research, theory of adaptive automation means of architecture and construction (automation means of formation and research of cognitive circle, cognitive disc, cognitive cylinder, cognitive cone, cognitive sphere, one-, two-, tree-, fore-, five- and more cognitive sphere and others), theory of statistical substantiation of practical use of received results, theory of factors influencing to efficiency of construction of buildings and constructions, theory of organization and plan of carrying out of experiment, theory of research of parameters of parametrical cognitive models block, theory of preliminary processing of a posteriori results of diagnostics, theory of choice of the statistical analysis methods of generated data sets, theory of analysis of productivity dynamics of construction, theory of dispersion, regression, discriminant, cluster analysis, multidimensional scaling, factor analysis and bibliographical lists;

the fundamental developments in area
"Theoretical agriculture and forestry" –
 theory of agricultural biology, theory of soil science,
 theory of agriculture, theory of agricultural land improvement,
 theory of agro-chemistry, theory of plant-growing science,
 theory of agricultural plants protection, theory of live stock farming (animal industry),
 theory of veterinary science, theory of preparation of agricultural production,
 theory of hunting and the hunting economy, theory of forestry,
 theory of economics and organization of agriculture,
 theory of mechanization and electrification of agriculture,
 theory of cognitive modeling technology
 in the theoretical agriculture and forestry;

the fundamental developments in area
"Theoretical scientific water economy" –
 theoretical scientific bases of water economy,
 theory of water economy, theory of water-economy construction,
 theory of hydro-technical and hydro-ameliorative constructions,
 theory of irrigation and water supply, theory of irrigating systems,
 theory of drying systems, theory of sewage waters, their clearing and use,
 theory of quality of water, theory of tests, measurements, control in water economy,
 theory of mechanization and automation in water economy,
 theory of complex use of water resources,
 theory of cognitive modeling technology
 in the theoretical water economy;

the fundamental developments in area
"Theoretical fish economy and aqua-culture" –
 theory of biological resources of The World ocean and internal reservoirs,
 theory of aqua-culture, theory of fish breeding (culture), theory of industrial fishery,
 theory of technical operation of fishing industry fleet,
 theory of technical operation of fish seaports,
 theory of technology of processing of raw materials of a water origin,
 theory of equipment for fish-processing industry,
 theory of cognitive modeling technology
 in the theoretical fish economy and aqua-culture;

I. The fundamental developments department
 "The theory of the chemistry, chemical technology and chemical industry" ("SCHN")

the fundamental developments in area
"Theoretical chemistry" (*) –
 theory of general-laboratory based chemical equipment,
 theory of equipment, theory of physical chemistry, theory of nonorganic chemistry,
 theory of complex compounds, theory of analytical chemistry,
 theory of organic chemistry, theory of bio-organic chemistry,
 theory of natural organic compounds and their synthetic analogues,
 theory of chemistry of high-molecular compounds, theory of biological chemistry,
 theory of cognitive modeling technology
 in the theoretical chemistry;

the fundamental developments in area
"Theoretical chemical technology and chemical industry" –
 theory of processes and devices of chemical technology, theory of chemical raw materials,
 theory of technology of nonorganic substances and products, theory of fertilizers manufacture,
 theory of manufacture of silicate and refractory nonmetallic materials,
 theory of industrial organic synthesis,
 theory of industrial synthesis of organic dyes and pigments,
 theory of technology of photographic materials,
 theory of technology of explosive substances and chemical protection means,
 theory of storage and destruction of chemical weapon,
 theory of technology of chemical-pharmaceutical means,
 theory of technology of fragrant substances,
 theory of technology of pesticides and disinfectant substances,
 theory of processing of natural gases, oil, gas condensate,
 their products and analogues, motor fuel and lubricant materials,
 theory of technology of firm combustible minerals processing,
 theory of timber-chemical manufactures,
 theory of technology of natural high-molecular compounds,
 theory of technology of synthetic high-molecular compounds,
 theory of technology of plastics,
 theory of technology of production of rubbers and products from them,
 theory of technology of varnish-paint materials and organic coverings,
 theory of technology of chemical fibers and strings,
 theory of technology of chemical reactants and especially clean substances,
 theory of technology of household chemical (goods) products,
 theory of technology of auxiliary materials,
 theory of cognitive modeling technology
 in the theoretical chemical technology and chemical industry;

The fundamental developments branches and departments of The SRI
 allow to develop the main and derivative scientific results of CMT.

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THE FUNDAMENTAL DEVELOPMENTS BRANCH

“COGNITIVE MODELING IN THE BIOLOGICAL SCIENCES” (“OBN”)
OF “THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV”

The developed “The fundamental developments branch
"Cognitive modeling in the biological sciences"” (“OBN”) treats to the fundamental 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 fundamental developments branches and departments 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 fundamental 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 fundamental developments department "The theory of the biology and pharmacology"” (“SOB”)
[the fundamental developments in area “Theoretical biology” – theory of biology, theory of methods and equipment for biological researches, theory of molecular biology, theory of bio-physics, theory of cytology, theory of embryology, theory of genetics, theory of virology, theory of micro-biology, theory of botany, theory of plants physiology, theory of zoology, theory of ecology, theory of anthropology, theory of physiology of human and animals, theory of morphology of human and animals, theory of immunology, theory of pharmacology, theory of toxicology, theory of radiation biology, theory of space biology, theory of bionics, theory of biological cybernetics, theory of bio-engineering, theory of cognitive modeling technology in theoretical biology, theory of modeling of biological construct of organic individual organism;

the fundamental developments in area
“ *Theoretical pharmacology* ” –
theory of pharmacology, theory of methods and equipment for pharmacological researches,
theory of pharmaco-kinetics and pharmaco-dynamics of preparations and substances,
theory of molecular pharmacology, theory of bio-pharmacology,
theory of cytological pharmacology,
theory of embryological pharmacology,
theory of genetical pharmacology,
theory of virological pharmacology,
theory of micro-biological pharmacology,
theory of botanical pharmacology,
theory of physiological pharmacology of plants,
theory of zoological pharmacology,
theory of ecological pharmacology, theory of anthropology of pharmacology,
theory of physiological pharmacology of human and animals,
theory of immunological pharmacology,
theory of toxicological pharmacology,
theory of radiation pharmacology, theory of space pharmacology,
theory of bio-engineering pharmacology,
theory of cognitive modeling technology
in theoretical pharmacology] .

II. “The fundamental developments department
“The theory of the physical-chemical bio-technology”” (“SFCHB”) (*)

[*the fundamental developments in area*
“ *Theoretical bio-technology* ” (*) –
theory of raw materials and products for bio-technological manufacture,
theory of bio-technological processes and devices,
theory of cellular engineering,
theory of technological bio-energetics,
theory of applied genetic engineering,
theory of engineering enzymology,
theory of immunological-bio-technological methods of analysis,
other theories and problems of bio-technology (genic engineering),
theory of cognitive modeling technology
in theoretical physical-chemical bio-technology (theory of genic engineering),
theory of modeling of desoxyribonucleic acid structure
based on multidimensional cognitive cylinder].

The fundamental developments branches and departments of The SRI
allow to develop the main and derivative scientific results of CMT.

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THE FUNDAMENTAL DEVELOPMENTS BRANCH
“COGNITIVE MODELING IN THE PHYSIOLOGY,

FUNDAMENTAL MEDICINE AND PUBLIC HEALTH SERVICES” (“OFFM”) OF “THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV”

The developed “The fundamental developments branch “Cognitive modeling in the physiology, fundamental medicine and public health services”” (“OFFM”) treats to the fundamental 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 fundamental developments branches and departments 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 fundamental 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 fundamental developments department "The theory of the physiology, bio-physiology and private physiology”” (“SF”) (*)
[the fundamental developments in area “Theoretical physiology” ()* – theory of general physiology, theory of methods and equipment of physiological researches, theory of physiology, theory of molecular physiology, theory of physiological cytology, theory of physiological embryology, theory of physiological genetics, theory of physiology of viruses, theory of micro-physiology, theory of physiology of organic individuals, theory of physiology of plants, theory of zoological physiology, theory of ecological physiology, theory of anthropology of physiology, theory of physiology of human and animals, theory of physiological immunology, theory of pharmacology and toxicology, theory of radiation physiology, theory of space physiology, theory of physiological cybernetics, theory of cognitive modeling technology in theoretical physiology;

t h e f u n d a m e n t a l d e v e l o p m e n t s i n a r e a
“Theoretical bio-physiology and public health services” () –*
theory of bio-medical-physiological disciplines,
theory of private physiology of analyzers and sensory systems,
theory of bio-physiological materials, means and products,
theory of bio-physiological technics, theory of clinical physiology,
theory of physiological bio-pharmacology and bio-epidemiology,
theory of other branches of bio-medicine and public health services,
theory of social physiology, theory of organization and management of public health services,
t h e o r y o f m o d i f i e d m o d e l o f r e d u c e d e y e ,
t h e o r y o f m o d i f i e d m o d e l o f r e d u c e d e a r ,
theory of software for automation of research tasks
of physiological, psychological and linguistical parameters
of parametrical cognitive models block in medicine,
theory of statistical substantiation of practical use of received results,
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,
theory of organization and plan of carrying out of experiment,
theory of research of physiological, psychological and linguistical
parameters of cognitive models of subject of training and means of training,
theory of preliminary processing of a posteriori results of diagnostics,
theory of choice of statistical analysis methods of generated data sets,
theory of analysis of productivity dynamics of researches
in field of bio-physiology and public health services,
theory of dispersion, regression, discriminant, cluster analysis,
multidimensional scaling, factor analysis and bibliographical lists,
theory of the complex analysis of modified model of reduced eye
for research of visual acuity, field of vision, color perception and others parameters
i n D e s c a r t e s s p a c e o f t h e 2 a n d 3 c o o r d i n a t e s ,
theory of the complex analysis of modified model of reduced ear
for research of absolute sensitivity and thresholds of sensitivity
i n D e s c a r t e s s p a c e o f t h e 2 a n d 3 c o o r d i n a t e s] .

II. “The fundamental developments department “The theory of the medicine, public health services, labor safety, environment preservation and ecology of person”” (“SFM”) (*)
[the fundamental developments in area “Theoretical medicine and public health services” – theory of medical-biological disciplines, theory of medical materials, means and products, theory of medical technics, theory of clinical medicine, theory of pharmacology, theory of hygiene and epidemiology, theories of other branches of medicine and public health services, theory of social hygiene, theory of organization and management of public health services, theory of cognitive modeling technology in theoretical medicine and public health services;
the fundamental developments in area “Theoretical labor safety” ()* – theory of organization and management of labor safety, working conditions, industrial sphere and safety precaution, theory of professional illnesses and their preventive measures, theory of accidents on manufacture and their prevention, theory of work capacity and examination of work capacity, theory of labor safety on categories of workers, theory of work safety on manufactures of increased danger, theory of cognitive modeling technology in theoretical labor safety, theory of cognitive model of subject of training;
the fundamental developments in area “Theoretical preservation of environment and ecology of person” – theory and methods of studying of preservation of environment and person, theory of ecological bases of use of natural resources, theory of international cooperation, theory of environmental contamination, theory of pollution, theory of pollution and protection of atmosphere, theory of pollution and protection of land waters, seas and oceans, theory of protection of soils, theory of protection of bowels, theory of ecological bases of ability to live of person, theory of influence of anthropogenous changes of environment on health and social-labor potential of person, on condition of natural ecosystems, populations and organisms of vegetative and generative (fauna) world, theory of protection vegetative and generative (fauna) world, theory of anthropogenous influence on landscape, theory of protection and optimization of landscape, theory of (nature) reserved affair, theory of protected natural territories and water areas, theory of acts of nature and accidents of anthropogenous origin, theory of ecological safety of person, theory of rational use and reproduction of natural resources by person, theory of preservation of environment and natural resources in separate regions and countries, theory of waste management, theory of small-waste and without waste technology, theory of protection of person from noise, vibration, electrical and magnetical fields and radiations, theory of cognitive modeling technology in theoretical preservation of environment and ecology of person].

The fundamental developments branches and departments of The SRI allow to develop the main and derivative scientific results of CMT.

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THE FUNDAMENTAL DEVELOPMENTS BRANCH

“COGNITIVE MODELING IN THE SCIENCES ABOUT THE EARTH” (“ONZ”)
OF “THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV”

The developed “The fundamental developments branch
"Cognitive modeling in the sciences about The Earth"” (“ONZ”)
treats to the fundamental 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 fundamental developments branches and departments 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 fundamental 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 fundamental developments department
"The theory of the geo-physics, geology, mining and metallurgy”” (“SGGGGN”)
*[the fundamental developments in area
“Theoretical geophysics” –*
theory of geo-magnetism and high layers of atmosphere,
theory of meteorology, theory of climatology, theory of oceanology,
theory of hydrology of land, theory of glaciology, theory of physics of The Earth,
theory of cognitive modeling technology
in theoretical geophysics ;

the fundamental developments in area "Theoretical geology" – theory of lithology, theory of tectonics, theory of geological-geo-physical researches of deep structure of The Earth, theory of regional geology, theory of planetology, theory of stratigraphy, theory of paleontology, theory of geo-chemistry, theory of mineralogy, theory of petrography, theory of experimental and technical mineralogy and petrography, theory and methods of mineralogical-petrographical and geo-chemical laboratory researches (bench or field), theory of anthropogenic period, theory of neo-tectonics, theory of geo-morphology, theory of ore minerals geology, theory of nonmetallic minerals geology, theory of geology of fields of oil, gas and condensates, theory of geology of deposits of coal, bituminous breeds and peat, theory of methods of search and investigation of minerals deposits, theory of technics and technology of geological-prospecting works, theory of hydro-geology, theory of engineering geology, theory of frozen condition of ground, theory of cognitive modeling technology in theoretical geology;

the fundamental developments in area "Theoretical mining" – theory of technics and technology of development of deposits of firm minerals, theory of development of deposits of ores of ferrous metals, theory of development of deposits of ores and looses of color and rare metals and diamonds, theory of development of deposits of coal and combustible slates, theory of development of peat deposits, theory of development of deposits of building and road materials, fire-resistant, ceramic, glass and mineral technical raw material, theory of development of deposits of chemical and agricultural-chemical raw material and salts, theory of development of deposits precious jewels and ornamental stones, theory of enrichment of minerals, theory of development of oil and gas deposits, theory of cognitive modeling technology in theoretical mining;

the fundamental developments in area "Theoretical metallurgy" – theory of metallurgical processes, theory of metallurgical heating engineering, theory of manufacture of ferrous metals and alloys, theory of manufacture of nonferrous (color) metals and alloys, theory of powder metallurgy, theory of metallurgy of semi-conductors, theory of rolling manufacture, theory of drawing and hardware manufacture, theory of pipes manufacture, theory of physical metallurgy (metallurgical science), theory of the technical analysis in metallurgy, theory of cognitive modeling technology in theoretical metallurgy].

II. “The fundamental developments department “The theory of the oceanology, structure and physics of atmosphere, geodesy, cartography and geography of The Earth and planets”” (“SOFAG”)
[the fundamental developments in area “Theoretical oceanology” – theory of oceanology, theory of applied oceanology, theory of aerial photograph and photogrammetry, theory of topography, theory of photo-topography, theory of cartography, theory of oceanology, theory of mapping of the underwater world of The Earth and planets, theory of cognitive modeling technology in theoretical oceanography;
the fundamental developments in area “Theoretical structure of atmosphere” – theory of structure of atmosphere, theory of aerial photograph and photogrammetry, theory of topography, theory of photo-topography, theory of cartography, theory of planetodesy of atmosphere, theory of mapping of atmosphere of The Earth and planets, theory of cognitive modeling technology in theoretical structure of atmosphere;
the fundamental developments in area “Theoretical physics of atmosphere” – theory of questions of atmosphere of The Earth and planets, theory of general problems of atmosphere physical experiment, theory of physics of elementary particles of atmosphere, theory of atmosphere fields, theory of physics of gases and liquids of atmosphere, theory of thermal-dynamics and statistical physics of atmosphere, theory of physics of micro-disperse firm bodies of atmosphere, theory of physics of plasma of atmosphere, theory of physics of atom and molecule of atmosphere, theory of optics of atmosphere, theory of radio-physics of atmosphere, theory of acoustics of atmosphere, theory of cognitive modeling technology in theoretical physics of atmosphere;
the fundamental developments in area “Theoretical geodesy and cartography” – theory of supreme geodesy, theory of applied geodesy, theory of aerial photograph and photogrammetry, theory of topography, theory of photo-topography, theory of cartography, theory of selenodesy, theory of planetodesy, theory of mapping of The Moon and planets, theory of cognitive modeling technology in theoretical geodesy and cartography;
the fundamental developments in area “Theoretical geography” – theory of geography, theory of historical geography, theory of military geography, theory of physical geography, theory of economical and social geography, theory of regional geography (country science), theory of medical geography, theory of toponymics, theory of cognitive modeling technology in theoretical geography].

The fundamental developments branches and departments of The SRI allow to develop the main and derivative scientific results of CMT.

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THE FUNDAMENTAL DEVELOPMENTS BRANCH

“COGNITIVE MODELING IN THE SOCIAL SCIENCES” (“OON”)
OF “THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV”

The developed “The fundamental developments branch
"Cognitive modeling in the social sciences"” (“OON”) treats to the fundamental 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 fundamental developments branches and departments 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 fundamental 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 fundamental developments department "The theory of the social sciences, philosophy, science of science, politics and political sciences, sociology, (cognitive) psychology, state, law and jurisprudential sciences, patenting business, invention and rationalization work”” (“SFPSPP”) (*)
[the fundamental developments in area “Theoretical social sciences” – theory and ideology of social sciences, theory of history of social sciences, theory of modern condition of social sciences, theory of scientific societies, conventions, congresses, conferences and symposiums on social sciences, theory of international cooperation in field of social sciences, theory of organization of scientific-research work in field of social sciences, theory of information work in social sciences, theory of terminology of social sciences, theory of propagation and popularization of social sciences, theory of teaching of social sciences, theory of mathematical modeling in social and humanitarian sciences, theory of staff of social scientists, theory of cognitive modeling technology in theoretical social sciences;
the fundamental developments in area “Theoretical philosophy” – theory of general problems of modern philosophy, theory of general-philosophical problems, theory of logic, theory of philosophy and methodology of science, theory of social philosophy, theory of ethics, theory of aesthetics, theory of philosophy of religion and atheism, theory of history of philosophy (theory of history of philosophy of science and society), theory of cognitive modeling technology in theoretical philosophy;

the fundamental developments in area "Theoretical science of science" – theory of development of science, theory of science and society, theory of sociology of science, theory of scientific work and scientific creativity, theory of organization of science, theory of politics in field of science, theory of technique and technics of research work, theory of economics of science, theory of scientific staff, theory of international cooperation in science, theory of science and scientific-research work in separate countries, theory of cognitive modeling technology in theoretical science of science;

the fundamental developments in area "Theoretical politics and political sciences" – theory of methodology of political researches, theory of history of political doctrines, theory of political systems, theory of internal policy, theory of international relations, theory of foreign (external) policy and diplomacy, theory of cognitive modeling technology in theoretical politics and political sciences;

the fundamental developments in area "Theoretical sociology" – theory of general problems of modern sociology, theory of methodology of sociology, theory of technique and technics of sociological researches, theory of society as systems, theory of social relations and processes, theory of social classes, communities and groups, theory of sociology of social life spheres, theory of social phenomena and institutes, theory of sociology of person and behavior, theory of historical and regional sociology, theory of applied sociology, theory of history of sociology, theory of cognitive modeling technology in theoretical sociology;

the fundamental developments in area "Theoretical (cognitive) psychology" ()* – theory of general psychology, theory of psychology of development, theory of age psychology, theory of comparative psychology, theory of social psychology, theory of applied psychology, theory of cognitive modeling technology in the theoretical (cognitive) psychology, theory of modified stratified-step model of processing (cognitive psychology) of information fragments content, theoretical bases of cognitive psychology and cognitive modeling technology, theoretical bases of parametrical cognitive models block for the system analysis of information-educational environments (cognitive models of subject of training and means of training), theory of ways of representation of structure of cognitive models and problem environments: formal classical of the 0th generation (logical and production models), nonformal classical of the 0th generation (semantic network, frame network and ontology), formal new of the 0th generation (calculus of theory of sets and corteges on domains and innovative calculus of theory of sets and graphs), nonformal new of the 0th generation (multilevel structural scheme and multilevel encapsulated pyramids combining theory of graphs and theory of sets), flat of the 1st generation (cognitive circle and cognitive disc), volumetric of the 1st generation (cognitive cylinder, cognitive cone and cognitive sphere), flat and volumetric of the 2nd generation (one-, two-, three-, four-, five- and more cognitive circle, cognitive disc, cognitive cylinder, cognitive cone and cognitive sphere), hybrid of the 3rd generation (combinations of the existing cognitive models),

theory of adaptive automation means of information-educational environment (basic and applied diagnostic module, electronic textbook, laboratory practical work, electronic dean, electronic library and others), theory of technical means of adaptive information interaction support (adaptive representation of sequence of information fragments processor, question-answers structures sequence processing processor, linguistic processor and other processors), theory of technical means of the complex analysis support (automation means of formation and research of psychological parameters of cognitive model as cognitive circle, cognitive disc, cognitive cylinder, cognitive cone, cognitive sphere, one-, two-, three-, four-, five- and more cognitive sphere and others);

t h e f u n d a m e n t a l d e v e l o p m e n t s i n a r e a
“Theoretical state management, law and jurisprudence sciences” – theory of state and law, theory of history of state and law, theory of history of political and legal doctrines, theory of constitutional (state) law, theory of municipal law, theory of administrative law, theory of information law, theory of financial law, theory of owner (enterprise) law, t h e o r y o f c i v i l l a w , theory of civil-procedural law (civil process), theory of arbitration-procedural law (arbitration process), theory of patent law, theory of industrial property law, t h e o r y o f c o p y r i g h t a n d a d j a c e n t r i g h t s , theory of succession law, theory of family law, theory of agrarian law, theory of legal problems of environment preservation, theory of ecological law, theory of land (ground) law, theory of forestry law, theory of water law, theory of air-protection law, theory of legislation about bowels, theory of legislation about fauna world, theory of labor law, theory of social support law, theory of legal institutions, theory of criminal law, theory of criminal-procedural law (criminal process), theory of criminology, theory of criminal-executive law, theory of penitentiary, theory of criminalistics, theory of judicial statistics, theory of international law, theory of international private law, theory of state and law of separate countries, theory of cognitive modeling technology in theoretical state management, law and jurisprudence sciences;

t h e f u n d a m e n t a l d e v e l o p m e n t s i n a r e a
“Theoretical patent business, invention and rationalization” – t h e o r y o f p a t e n t - i n f o r m a t i o n w o r k , theory of invention and rationalization, t h e o r y o f p a t e n t - l i c e n s e w o r k , theory of the technical-economical analysis on patent materials, t h e o r y o f i n v e n t i o n l a w , theory of cognitive modeling technology in theoretical patent business, invention and rationalization].

II. “The fundamental developments department
 “The theory of the economics and economical sciences,
 organization, management, statistics and financial analysis
 based on cognitive modeling technology”” (“SE”) (*)
*[the fundamental developments in area
 “Theoretical economics and economical sciences”* –
 economical theories, theory of history of economical idea,
 theory of account-economical sciences, theory of science of economics management,
 theory of economical history, theory of The World economy,
 theory of international economical relations,
 theory of economical development and growth,
 theory of prediction and planning of economics,
 theory of economical cycles and crises,
 theory of productive forces and scientific-technical progress,
 theory of social-economical structure,
 theory of reproduction structure of economics,
 theory of accumulation and consumption, theory of well-being,
 theory of territorial structure of economics,
 theory of regional and city economics, theory of branch structure of economics,
 theory of financial science, monetary and tax theories,
 theory of credit-financial institutes,
 theory of cognitive modeling technology
 in theoretical economics and economical sciences;
*the fundamental developments in area
 “Theoretical organization and management”* –
 theory and methodology of management,
 theory of state and administrative management,
 theory of organization of economics management, theory of social management,
 theory of prediction, theory of futurology,
 theory of strategical management, theory of strategical planning,
 theory of cognitive modeling technology
 in theoretical organization and management;
*the fundamental developments in area
 “Theoretical statistics”* –
 theory of general statistics, theory of economical statistics,
 theory of branch statistics, theory of social statistics,
 theory of international statistics,
 theory of statistics of separate countries and social-economical systems,
 theory of organization and management of statistics,
 theory of methods and means of data mining,
 processing and the analysis of statistical information,
 theory of cognitive modeling technology
 in theoretical statistics;

the fundamental developments in area "The theoretical financial analysis, monetary circulation and credit" ()* – theory of tendencies, dependences and laws of the financial analysis of objects, processes and phenomena, theory of system, information and cognitive approaches in economics, theory of structure and dynamics functioning of financial market, theory of global purposes of standardization of accounting and problems of unification of accounting documents, theory of institutional subjects of regulating of creation, distribution and use of international standards, theory of principles of creation, distribution and use of international standards of financial and accounting documents, theory of basic methods of financial documents transformation, theory of formation of accounting balance under international standards of financial documents, theory of qualifying tests of professional participants of financial system of the country, theory of administrative-legal forms of existence of managing subject, theory of features of procedure of the financial analysis of managing subject, theory of organizational structure of enterprise and its features (educational establishment of educational system and information-educational environment), theory of inflationary depreciation, discounting and compounding of money streams in economical system of the country, theory of indexes of dynamics of financial market and tools, theory of dynamics and communications of managing subject, theory of investment and innovative politics of managing subject in financial system of the modern country, theory of organizational, technological, scientific, methodical, normative-legal, information, hardware, software, brainware, raw, warehouse, personnel and economical preparations of manufacture and basis of the financial analysis and estimation of quality of activity of credit and other organization, theory of requirements and structure of financial documents of (non)production organizational structures, theory of additional elements of accounting and financial documents of credit organization, theory of consumers of financial documents, theory of elements of financial documents connected with changes of financial-economy activity, theory of simple and consolidated accounting and financial documents, theory of methods of the financial analysis of different forms of documents, theory of accounts structure of the accounting and financial analysis, theory of the vertical, horizontal and trend financial analysis based on analytical coefficients system, theory of scheme of carrying out of auditor check inspection, the financial analysis and audit, theory of external and internal control of different organizations activity, theory of kinds of bank operations of (credit) organization and enterprise, theory of structure of accounting balance (form №1), theory of structure of explanatory note to accounting balance, theory of structure of report about profits and losses (form №2), theory of structure of explanatory note to report about profits and losses, theory of structure of report about change of capital (form №3), theory of structure of report about movement of money resources on accounts (form №4), theory of structure of explanatory note to report about movement of means, theory of structure of appendix to accounting balance (form №5), theory of structure of report about target use of received means (form №6), theory of structure of auditor conclusion about results of activity of enterprise, (credit) organization, organization of The Federal reserved system of The USA,

theory of analysis of stability of credit organization and commercial bank,
theory of basic analytical coefficients of the financial analysis,
theory of structure of accounting balance and report about profits and losses of enterprise
for introduction of analytical coefficients system,
theory of cognitive modeling technology
with dynamic cloning, verification and subverification,
theory of iterative cycle and technique of use
of cognitive modeling technology,
theory of technique of formation of normative-legal and information basis
for the financial analysis of organization,
theory of technique of additional check of information basis
of the financial analysis of organization,
theory of technique of creation and modification
of working plan of accounts and model of accounting,
theory of technique of carrying out of the financial analysis of condition of organization,
theory of parametrical cognitive models block for the financial analysis
and increase of efficiency of functioning of objects, processes and phenomena,
theory of structure of cognitive models for the vertical, horizontal and trend
financial analysis of (credit) organization and enterprise,
theory of ways of representation of structure of cognitive models and problem environments
(formal and nonformal classical and new of 0th generation,
flat and volumetric of the 1st generation and 2nd generation and hybrid of the 3rd generation),
theory of algorithm of formation of cognitive model structure,
theory of technique of research of cognitive models parameters,
theory of algorithm of analysis of a posteriori results of research,
theory of formation and calculating of accounting balance units
of production and nonproduction organization,
theory of calculation of cognitive models parameters
for the vertical, horizontal and trend
static and dynamic financial analysis
of enterprise and (credit) organization
in conditions of definiteness and uncertainty,
theory of software for automation of research tasks,
theory of statistical substantiation of practical use of received results,
theory of factors influencing to efficiency of functioning
of (credit) organization and enterprise in economical system,
theory of organization and plan of carrying out of experiment,
theory of research of cognitive models parameters
for the vertical, horizontal and trend financial analysis,
theory of preliminary processing of a posteriori results of diagnostics,
theory of choice of statistical analysis methods of generated data sets,
theory of analysis of productivity dynamics of financial-economy activity,
theory of dispersion, regression, discriminant, cluster analysis,
multidimensional scaling, factor analysis and bibliographical lists;
the fundamental developments in area
“Theoretical other branches of economics” –
theory of manufacture of musical instruments,
theory of manufacture of photo-art products, theory of jeweler industry,
theory of manufacture of toys, theory of manufacture of sport products,
theory of manufacture of writing goods,
theory of cognitive modeling technology
in theoretical other branches of economics].

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allow to develop the main and derivative scientific results of CMT.

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THE FUNDAMENTAL DEVELOPMENTS BRANCH
"COGNITIVE MODELING IN THE GLOBAL PROBLEMS
AND INTERNATIONAL RELATIONS" ("OGPMO")

OF "THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV"

The developed "The fundamental developments branch
"Cognitive modeling in the global problems
and international relations" ("OGPMO")
treats to the fundamental 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")",
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3) includes several various main divisions:
I. "The fundamental developments department
"The theory of the demography, pedagogics and national education,
standardization, complex studying of separate countries and regions,
general and complex problems of natural, exact, technical,
public and applied sciences and manufacture branches" ("SGP")
the fundamental developments in area
"Theoretical demography" –
theory and methodology of demographical science,
theory of general problems of population, theory of population statistics,
theory of history of population, theory of historical demography,
theory of population moving, theory of geographical demography,
theory of The World's population,
theory of cognitive modeling technology
in theoretical demography;
the fundamental developments in area
"Theoretical pedagogics and national education" –
theory of general pedagogics, theory of history of education and pedagogics,
theory of personnels, theory of education system, theory of preschool education,
theory of preschool pedagogics, theory of comprehensive school,
theory of pedagogics of comprehensive school,
theory of out-of-school (additional) education and training,
theory of out-of-school pedagogics, theory of special (correctional) schools,
theory of defectology, theory of initial vocational-technical education,
theory of pedagogics of professional school,
theory of average vocational education,
theory of pedagogics of average vocational education,
theory of supreme vocational education,
theory of pedagogics of supreme professional school,
theory of education of adults, theory of improvement of professional skill,
theory of self-education, theory of family education,
theory of family pedagogics, theory of specialized branches of education,
theory of technical means of training and training equipment,
theory of national education and pedagogics in separate countries,
theory of cognitive modeling technology
in theoretical pedagogics and national education;

the fundamental developments in area
“Theoretical standardization” – theory of systems and services of standardization, theory of scientific-methodological support of systems and services of standardization, theory of cognitive modeling technology in theoretical standardization;

the fundamental developments in area
“Theoretical complex studying of separate countries and regions” – theory of The RF as a particular, theory of The RF as a whole, theory of The North-Western federal district of The RF, theory of The Central federal district of The RF, theory of The Privolgsky federal district of The RF, theory of The Southern federal district of The RF, theory of The Uralian federal district of The RF, theory of The Siberian federal district of The RF, theory of The Far-Eastern federal district of The RF, theory of area and territory of The former USSR, theory of countries of The CIS of Eastern Europe, theory of countries of The CIS of Zacaucasias, theory of countries of The CIS of Central Asia, theory of Baltic countries and Baltic, theory of Europe as a whole, theory of Western Europe, theory of Southern Europe, theory of Central Europe, theory of Eastern Europe as a whole, theory of Scandinavia and Scandinavian countries, theory of Asia as a whole, theory of Forward Asia, theory of Eastern Asia, theory of Southern Asia, theory of South-Eastern Asia, theory of Central Asia, theory of Near and Middle East, theory of Africa as a whole, theory of Northern Africa, theory of East Africa, theory of Central Africa, theory of Western Africa, theory of Southern Africa, theory of America as a whole, theory of The USA and Canada, theory of Central America, theory of Southern America, theory of Australia and countries of Oceania, theory of Arctic and the Antarctic polar areas, theory of surface of The Earth and land, ocean, sea and internal waters, theory of other political-geographical features of The Earth, theory of cognitive modeling technology in theoretical complex studying of separate countries and regions;

the fundamental developments in area
“Theoretical general and complex problems of natural and exact sciences” – theory of general and complex problems of natural and exact sciences, theory of cognitive modeling technology in theoretical general and complex problems of natural and exact sciences;

the fundamental developments in area
“Theoretical general and complex problems of technical and applied sciences and manufacture branches” – theory of materiology (material science), theory of general technology of production, theory of designing, theory of constructing, theory of flexible industrial systems (FIS), theory of vacuum technics, theory of cryogenic technics, theory of corrosion and protection against corrosion, theory of welding, theory of optical manufacture, theory of staff, theory of control and quality management, theory of installation, theory of operation and repair of industrial equipment, theory of material-technical supply, theory of logistics, theory of warehouse economy, theory of container and packing, theory of secondary raw materials, theory of fire safety, theory of safety, theory of salvage-rescue services, theory of technical industrial art, theory of ergonomics, theory of information protection, theory of cognitive modeling technology in theoretical general and complex problems of technical and applied sciences and manufacture branches;

the fundamental developments in area
“Theoretical complex problems of social sciences” – theory of social-political idea, theory of global problems, theory of work, theory of cognitive modeling technology in theoretical complex problems of social sciences].

II. “The fundamental developments department
“The theory of the culture and cultural science, art and art science,
mass communication, journalism and mass media means,
religion, internal trade and tourist-excursion service,
external trade, transport, housing-communal services,
housekeeping and consumer services at international level”” (“SMO”)
[the fundamental developments in area
“Theoretical culture and cultural science” –
 theory, methodology and philosophy of culture, theory of history of culture,
 theory of history of culture studying, theory of culture in the modern world,
 theory of organization and management in field of culture,
 theory of international cooperation in field of culture,
 theory of hardware of establishments of culture,
 theory of social-cultural activity in sphere of leisure,
 theory of library affair, theory of library science,
 theory of bibliography, theory bibliography science,
 theory of museum affair, theory of museology (museum science),
 theory of monuments protection of history and culture,
 theory of archival affair, theory of archival science,
 theory of culture of separate countries and peoples,
 theory of cognitive modeling technology
 in theoretical culture and cultural science;
the fundamental developments in area
“Theoretical art and art science” –
 theory and methodology of art and problems of art science,
 theory of history and modern condition of art,
 theory of art science and photo-art critics,
 theory of art in the modern world,
 theory of organization and management in field of art,
 theory of international cooperation in field of art,
 theory of fine art,
 theory of music and musicology (music science), theory of theatre and theater science,
 theory of mass and theatrical holidays, theory of dance and choreography,
 theory of circus, theory of platform, theory of cinema and motion picture arts,
 theory of national folk art, theory of art of separate countries and peoples,
 theory of cognitive modeling technology
 in theoretical art and art science;
the fundamental developments in area
“Theoretical mass communication,
journalism and mass media means” –
 theory of mass communication means,
 theory of open network information resources (Internet and WWW),
 theory of journalism, theory of mass media means,
 theory of seal (press), theory of television (TV), theory of radio,
 theory of use of technical means for mass communication,
 theory of cognitive modeling technology
 in theoretical mass communication,
 journalism and mass media means;

the fundamental developments in area “Theoretical religion” – theory of atheism and free-thinking, theory of separate religions, theory of church and cults, theory of problems of religious consciousness, theory of philosophy and religion, theory of religion, theory of church and society, theory of organizational-practical activity of churches, theory of history of atheism, theory of religions and churches, theory of cognitive modeling technology in theoretical religion;

the fundamental developments in area “Theoretical internal trade and tourist-excursion service” – theory of general questions of internal trade and tourist-excursion service, theory of wholesale trade, theory of retail trade, theory of public catering, theory of hotel economy, theory of tourist-excursion service, theory of cognitive modeling technology in theoretical internal trade and tourist-excursion service;

the fundamental developments in area “Theoretical external trade” – theory and kinds of external trade, theory of external trade politics, theory of communication of external trade with manufacture, theory of external trade structure, theory of calculations on external trade operations and external trade transportations, theory of world commodity markets, theory of international agreements about trade, theory of international contracts, theory of international trading organizations, theory of commodity agreements, theory of organization and management of external trade, theory of cognitive modeling technology in theoretical external trade;

the fundamental developments in area “Theoretical transport” – theory of railway transport, theory of motor car transport, theory of water transport, theory of air transport, theory of pipeline transport, theory of industrial transport, theory of municipal transport, theory of interaction of different types of transport, theory of mixed transportations, theory of other types of transport, theory of cognitive modeling technology in theoretical transport;

the fundamental developments in area “Theoretical housing-communal economy, housekeeping and consumer service” – theory of housing economy, theory of communal economy, theory of consumer service, theory of housekeeping, theory of cognitive modeling technology in theoretical housing-communal economy, housekeeping and consumer service].

The fundamental developments branches and departments of The SRI allow to develop the main and derivative scientific results of CMT.

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THE FUNDAMENTAL DEVELOPMENTS BRANCH
“COGNITIVE MODELING

IN THE HISTORICAL-PHILOLOGICAL SCIENCES” (“OIFN”
OF “THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV”

The developed “The fundamental developments branch
“Cognitive modeling in the historical-philological sciences”” (“OIFN”
treats to the fundamental 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
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for creation, distribution and use of the main and derivative
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2) works in several main directions, which allow to provide
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(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 fundamental developments department
“The theory of the history and historical sciences”” (“SI”)
*[the fundamental developments in area
“Theoretical history and historical sciences” –*
theory of general history, theory of history of Azerbaijan,
theory of history of Armenia, theory of history of Belarus,
theory of history of Georgia, theory of history of Kazakhstan, theory of history of Kirghizia,
theory of history of Moldova, theory of history of The RF, theory of history of Tajikistan,
theory of history of Turkmenia, theory of history of Uzbekistan, theory of history of Ukraine,
theory of history of separate processes, parties and phenomena of human activity,
theory of archeology, theory of ethnography and historical anthropology,
theory of auxiliary historical disciplines, theory of history of separate countries,
theory of cognitive modeling technology
in theoretical history and historical sciences].

II. “The fundamental developments department “The theory of the science of language, (cognitive) linguistics, literature, literary science and oral national creativity”” (“SYL”) (*)
[*the fundamental developments in area “Theoretical science of language”* –
 theory of general science of language,
 theory of applied science of language, theory of languages of The World,
 theory of cognitive modeling technology
 in theoretical science of language;
the fundamental developments in area “Theoretical (cognitive) linguistics” ()* –
 theory of general questions of theoretical (cognitive) linguistics,
 theory of (cognitive) linguistics, theory of applied linguistics,
 theory of cognitive modeling technology
 in theoretical (cognitive) linguistics,
 theory of modified stratified-step model
 of understanding (cognitive linguistics) of information fragments content,
 theoretical bases of cognitive linguistics and cognitive modeling technology
 in technical, economical, physical-mathematical and other sciences,
 theoretical bases of parametrical cognitive models block
 for the system analysis of information-educational environments
 (cognitive models of subject of training and means of training),
 theory of ways of representation of structure of cognitive models and problem environments:
 formal classical of the 0th generation (logical and production models),
 nonformal classical of the 0th generation (semantic network, frame network and ontology),
 formal new of the 0th generation (calculus of theory of sets and corteges on domains
 and innovative calculus of theory of sets and graphs),
 nonformal new of the 0th generation (multilevel structural scheme
 and multilevel encapsulated pyramids combining theory of graphs and theory of sets),
 flat of the 1st generation (cognitive circle and cognitive disc),
 volumetric of the 1st generation (cognitive cylinder, cognitive cone and cognitive sphere),
 flat and volumetric of the 2nd generation (one-, two-, three-, four-, five- and more cognitive circle,
 cognitive disc, cognitive cylinder, cognitive cone and cognitive sphere),
 hybrid of the 3rd generation (combinations of the existing cognitive models),
 theory of adaptive automation means of information-educational environment
 (basic and applied diagnostic module, electronic textbook,
 laboratory practical work, electronic dean, electronic library and others),
 theory of technical means of adaptive information interaction support
 (adaptive representation of sequence of information fragments processor,
 question-answers structures sequence processing processor,
 linguistical processor and other processors),
the fundamental developments in area “Theoretical literature, literary science and oral national creativity” –
 theory of literature, theory of history of literature, theory of national creativity,
 theory of auxiliary literary science disciplines,
 theory of products of fiction literature,
 theory of cognitive modeling technology
 in theoretical literature, literary science and oral national creativity].

The fundamental developments branches and departments of The SRI allow to develop the main and derivative scientific results of CMT.

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THE FUNDAMENTAL DEVELOPMENTS BRANCH

“COGNITIVE MODELING IN THE SPORTS SCIENCES” (“OSN”)
OF “THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV”

The developed “The fundamental developments branch
"Cognitive modeling in the sports sciences"” (“OSN”)
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3) includes several various main divisions:
I. “The fundamental developments department
"The theory of the competitions, sport and sports sciences”” (“STSSSN”)
*[the fundamental developments in area
“Theoretical physical training and sport” –
theory of physical training and sport,
theory of medical-biological bases of physical training and sport,
theory of material-technical base of physical training and sport,
theory of methodical bases of kinds of sport, theory of sport competitions,
theory of cognitive modeling technology
in theoretical physical training and sport]*.

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THE FUNDAMENTAL DEVELOPMENTS BRANCH

“COGNITIVE MODELING IN THE MILITARY SCIENCES” (“OVN”
OF “THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV”

The developed “The fundamental developments branch
"Cognitive modeling in the military sciences"” (“OVN”
treats to the fundamental developments divisions
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for the translation, carrying out of int. action and receiving of “The Nobel Prize”);
3) includes several various main divisions:
I. “The fundamental developments department
"The theory of the architecture, construction, technics, history, education,
politics and economics in the armed forces"” (“STASTIOPEVS”)
*[the fundamental developments in area
“Theoretical military science” –
theory of doctrines about war and armies, theory of military history,
theory of military education and professional training of staff,
theory of military politics, theory of military doctrines, theory of military science,
theory of military-applied science, theory of arms and military technics,
theory of armed forces, theory of military economics,
theory of cognitive modeling technology
in theoretical military science]*.

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