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THE APPLIED DEVELOPMENTS DIRECTION "COGNITIVE MODELING IN THE NATURAL SCIENCES" ("NEN") OF "THE SRI "SFA CMT" OF "THE RA(N)S" NAMED AFTER V.N. VENIAMINOV" (PART 3)

The developed "The applied developments direction "Cognitive modeling in the natural sciences"" ("NEN") treats to the applied developments divisions of "The scientific-research institute "System and financial analysis based on cognitive modeling technology" of "The RA(N)S" named after V.N. Veniaminov" ("The SRI "SFA CMT" of "The RA(N)S" named after V.N. Veniaminov" – The SRI) as the first SRI in structure of "The SIO "Academy of cognitive natural sciences"" ("The SIO "ACNS""), an additional component of science and education system of the modern country for creation, distribution and use of the main and derivative scientific results of the cognitive modeling technology (CMT) (www.vetrovan.(spb.)ru) [see the applied developments directions and scientific-researches laboratories of The SRI]: 1) it is executed by the principle of "administrative-economy submission"; 2) works in several main directions, which allow to provide development of the applied main and derivative scientific results (my second report on SRW from 2006-2008(9) y. was submitted to "The SPbSETU "LETI"" and The Government of The RF for the translation, carrying out of int. action and receiving of "The Nobel Prize"); 3) includes several various main divisions: V. "The scientific-researches laboratory "The research of applications of the models, methods and technologies of the geology of oil and gas and oil and gas industry"" ("SNG") [***the applied developments in area "Applications of geology of oil and gas"*** – usage of theory of lithology, usage of theory of tectonics, usage of theory of geological-geo-physical researches of deep structure of The Earth, usage of theory of regional geology of deposits, usage of theory of planetology, usage of theory of stratigraphy, usage of theory of paleontology, usage of theory of geo-chemistry, usage of theory of mineralogy, usage of theory of petrography, usage of theory of experimental and technical mineralogy and petrography of oil, natural and passing gas, usage of theory of methods of mineral-petrographical and geochemical laboratory researches, usage of theory of anthropogenic period, usage of theory of neo-technics, theory of geo-morphology, usage of theory of geology of fields of oil, gas and its condensates, usage of theory of methods of search and investigation of fields of oil and gas, usage of theory of technics and technology of geological-prospecting works, usage of theory of hydro-geology, usage of theory of engineering geology of oil and gas, usage of theory of frozen condition of ground of deposits, usage of theory of cognitive modeling technology in applications of geology of oil and gas;

the applied developments in area "Applications of oil and gas industry" – usage of theory of processes and devices of oil and gas technology, usage of theory of oil and gas raw material, usage of theory of technology of nonorganic substances and products of oil, natural and passing gas, usage of theory of technology of production of fertilizers from oil and gas, usage of theory of technology of production of silicate and refractory nonmetallic materials from oil and gas, usage of theory of industrial organic synthesis, usage of theory of industrial synthesis of organic dyes and pigments from oil and gas, usage of theory of technology of production of photographical materials from oil and gas, usage of theory of technology of protection against explosions and means of chemical protection of oil and gas technology, usage of theory of technology of production of chemical-pharmaceutical means from oil, natural and passing gas, usage of theory of technology of production of fragrant substances from oil and gas, usage of theory of technology of production of pesticides and disinfectant substances from oil, natural and passing gas, usage of theory of technology of refining of oil, natural and passing gases and their condensates, their products and analogues, motor fuel and lubricants from oil and gas, usage of theory of technology of production of natural high-molecular compounds from oil, natural and passing gas, usage of theory of technology of production of synthetic high-molecular compounds from oil and gas, usage of theory of technology of production of plastics, rubbers and products from oil, natural and passing gas, usage of theory of technology of production of paint-varnish materials and organic coverings from oil and gas, usage of theory of technology of production of chemical fibers and strings from oil and gas, usage of theory of technology of production of chemical reactants and especially clean substances from oil and gas, usage of theory of technology of production of household chemical goods and auxiliary materials from oil, natural and passing gas, usage of theory of cognitive modeling technology in applications of oil and gas industry].

VI. “The scientific-researches laboratory "The research of applications of the system analysis based on cognitive modeling technology, prediction, standardization, unification and complex problems of exact technical sciences"” (“SSAP”) (*) [***the applied developments in area “Applications of the system analysis” (*)*** – usage of theory of tendencies, dependences and laws of the system analysis of objects, processes and phenomena, usage of theory of cognitive modeling technology with dynamic cloning, verification and subverificatiuon, usage of theory of iterative cycle and technique of use of, cognitive modeling technology, usage of theory of parametrical cognitive models block for the system analysis of information-educational environments and increase of 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), usage of theory of ways of representation of structure of cognitive models and difficult problem environments: formal classical of the 0^{th} generation (logical and production models), nonformal classical of the 0^{th} generation (semantic network, frame network and ontology), formal new of the 0^{th} generation (calculus of theory of sets and corteges on domains and innovative calculus of theory of sets and graphs), nonformal new of the 0^{th} generation (multilevel structural scheme and multilevel encapsulated pyramids combining theory of graphs and theory of sets), flat of the 1^{st} generation (cognitive circle and cognitive disc), volumetric of the 1^{st} generation (cognitive cylinder, cognitive cone and cognitive sphere), flat and volumetric of the 2^{nd} generation (one-, two-, three-, four-, five- and more cognitive circle, cognitive disc, cognitive cylinder, cognitive cone and cognitive sphere), hybrid of the 3^{fd} generation (combinations of the existing cognitive models), usage of theory of algorithm of formation of cognitive models structure, usage of theory of technique of research of cognitive models parameters, usage of theory of algorithm of analysis of a posteriori results of research, usage of 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), usage of theory of technical means of support of adaptive information interaction (adaptive representation of sequence of information fragments processor, question-answers structures sequence processing processor, linguistical processor and others processors), usage of theory of statistical substantiation of practical use of received results, usage of theory of factors influencing to efficiency of knowledge formation in information-educational environment and increase of productivity of functioning of difficult objects, processes and phenomena, usage of theory of organization and plan of carrying out of experiment, usage of theory of research of parameters of cognitive models usage of theory of preliminary processing of a posteriori results of diagnostics, usage of theory of choice of methods of statistical analysis of generated data sets, usage of theory of analysis of dynamics of productivity of training, usage of theory of dispersion, regression, discriminant, cluster analysis, multivariate scaling, factor analysis, bibliographical lists; ***the applied developments in area “Applications of standardization”*** – usage of theory of systems and services of standardization, usage of theory of scientific-methodological support of systems and services of standardization, usage of theory of cognitive modeling technology in applications of standardization].

The applied developments directions and scientific-researches laboratories of The SRI allow to develop the main and derivative scientific results of CMT.