

THE RESPONSE
of the national member of “The dissertation council”
of “The Saint-Petersburg state university” (“SPbSU”)
on the dissertation (in the form of scientific monography) on the rights of manuscript
of Vetrov Anatoly Nikolaevich
on the theme “The environment of automated training
with the properties of adaptation based on the cognitive models”,
submitted on the competition of the scientific degree of the candidate of technical sciences
on the spec. 05.13.01 – “The system analysis, control and information processing”
(technical sciences)

I. The relevance of scientific researches and the theme of the dissertation of the applicant

According to the principles of automated training and open education, the learning process of modern educational (scientific) establishment *is based* on the use of different wide potential capabilities of the automated (innovative) (open) information-educational environment, for formation of which directly requires the active work of specialists on the preparation and support of electronic educational information resources, but the technologies, methods and means of automation of the creation of high-technological learning-methodical materials (complexes) of the new generation, taking into account the various individual features (parameters) of the subjects of training *are not sufficiently developed*.

II. The theoretical and practical significance of scientific works of the applicant

2.1. According to the items 1542, 1543, 1544, 1545, 1546, 1547 and 1551 of “The civil codex of RF”

Vetrov A.N. is “*the author of the unique technology*” of cognitive modeling for the system analysis of the information-educational environments, the financial analysis of the highly-integrated (credit) organizations and the complex analysis of the difficult objects, processes and phenomena at the micro-level” (has 01 secondary education – physical-mathematical sciences and 03 higher educations – technical sciences, military sciences and economic sciences).

2.2. According to the decision of “The Presidium of “The Russian academy of natural science” (“RANS”)”

the main data about Vetrov A.N. *have been added to the encyclopedia “Famous scientists” of “RANS”*, and his specified dissertation (in the form of scientific monography) on the rights of manuscript *was repeatedly selected for the participation in the international book exhibitions-fairs*: “The 38th int. Paris book salon 2018 y.” (“Salon du livre de Paris 2018”) (The republic of France, Paris city, on the 16th-19th of March 2018 y.), “The Moscow international salon of education 2018 y.” (“MISE 2018”) (The Russian Federation, Moscow city, “EANE”, on the 18th-21st of April 2018 y.), “The 31st Moscow int. book exhibition-fair 2018 y.” (“MIBEF 2018”) (The Russian Federation, Moscow city, “EANE”, on the 05th-09th of September 2018 y.), “The 36th int. book exhibition Liber Barcelona 2018 y.” (“Liber Barcelona 2018”) (The Kingdom of Spain, Barcelona city, on the 03rd-05th of October 2018 y.), “The 72nd int. book exhibition Book Expo America 2019 y.” (“Book Expo America 2019”) (The United states of America, New York city, on the 29th-31st of May 2019 y.), “The 30th int. book exhibition Hong Kong Book Fair 2019 y.” (“Hong Kong Book Fair 2019”) (The people’s republic of China, Hong Kong city, on the 17th-23rd of July 2019 y.), “The international book exhibition Buch Wien 2019 y.” (“Buch Wien 2019”) (The republic of Austria, Vienna city, on the 06th-10th of November 2019 y.).

2.3. According to the decision of “The Presidium of “RANS”” (the protocol №699 from the 08th of June 2018 y.)

Vetrov A.N. *is the founder of the new (academic) scientific direction “Cognitive informatics, cognitive modelling technology for the system and financial analysis”*, which is directly added to the published official “The registry of the new scientific directions” of “RANS”.

III. The main scientific results of the dissertation of the applicant and their novelty

- 3.1. The structure of the information-educational environment and the principles of functioning of the main components of the system of automated (remote) training with the properties of adaptation based on the parametrical cognitive models block – *differ* in the possibility of realization of the additional contour of adaptation on the basis of the individual features of personality of the subjects of training (trainees), allowing significantly to increase the efficiency (resultativity) of functioning of the traditional or automated information-educational environment of the automated (remote) training system and its components.
- 3.2. The cognitive modeling technology, including the technique of its use, the algorithm of formation of the structure of the parametrical cognitive model, the techniques of research of the parameters of the cognitive models of the subject and means of training and the algorithm of processing of a posteriori data of diagnostics in the form of testing – *allows* respectively to formalize the sequence of use of the technology, to obtain (form) the structure of the parametrical cognitive model, to provide the statement of the experiment and the automated diagnostics in the form of testing of the parameters of the parametrical cognitive model of the subject of training (trainee), to form the function of estimation and to calculate the indicators of quality of the method of research on the basis of the accumulated a posteriori data (the results of testing) and in general to carry out the complex system analysis of the efficiency of functioning of the (innovative automated) information-educational environment of the automated (remote) training system and its components in the context of a series of the selected scientific aspects for the scientific justification.
- 3.3. The innovative parametrical cognitive models block, which includes the cognitive model of the subject of training and the cognitive model of the means of training – *accumulate* respectively the nominal values of parameters (factors), characterizing the individual features of personality of the subject of training and the potential technical parameters (capabilities) of the means of training, providing the adaptive generation of the sequence of educational influences.
- 3.4. The complex of programs, including the adaptive electronic textbook, the main diagnostic module and the applied diagnostic module – *directly provide* the potential possibility accordingly the automated individually-oriented (adaptive) generation of the sequence of diverse information fragments by the different way, the automated estimation of the level of residual knowledge of the contingent of trainees and the diagnostics of parameters of the cognitive model of the subject of training (trainee).

IV. The degree of validity and reliability of the scientific provisions and conclusions, formulated by the applicant in the content of the dissertation on the rights of manuscript

It is achieved by the system approach to the description of the object of research, the correct use of fundamental provisions of the theory of information, physiology of sensory systems, cognitive psychology and applied linguistics, the approbation of the main provisions of dissertation on the seminars and conferences of different level, the results of statistical processing of a posteriori data of the series of experiments.

V. The general details about the structure and volume of the dissertation of the applicant

The dissertation (in the form of scientific monography) on the rights of manuscript *consists from* the introduction, seven sections with the main scientific results and conclusions, the conclusion, the bibliographic section, including 120 names (without appendixes), at the same time the specified dissertation of the applicant Vetrov A.N. directly *is stated* on 272 pages of typewritten text and contains 79 pictures and 29 tables.

VI. The recommendations on the use of the scientific results of the dissertation of the applicant

There are recommended the further expansion of the cognitive modeling technology (not only for the system analysis of the information-educational environments at the micro-level), and also the introduction and use of the different obtained basic and derived fundamental and applied scientific results in the territory of RF and abroad.

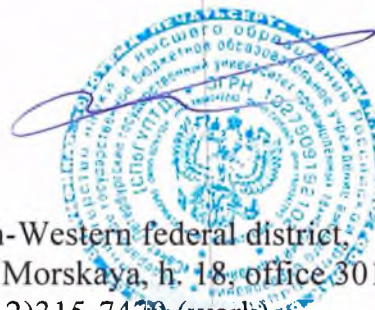
VII. The conclusion about the compliance of the dissertation to the criteria, established

by “The order of award in “SPbSU” of the scientific degree of the candidate of sciences, the scientific degree of the doctor of sciences”, approved by The order of “SPbSU” from the 01.09.2016 y. №6821/1 “About the order of award of the scientific degrees in “SPbSU””

The dissertation (in the form of scientific monography) on the rights of manuscript of the applicant of scientific degree Vetrov Anatoly Nikolaevich on the theme “The environment of automated training with the properties of adaptation based on the cognitive models” *conforms* to the main requirements, established by The order of “SPbSU” from the 01.09.2016 y. №6821/1 “About the order of award of the scientific degrees in “SPbSU””, and directly the applicant of scientific degree Vetrov Anatoly Nikolayevich *deserves* the award of the scientific degree of the candidate of technical sciences on the spec. 05.13.01 – “The system analysis, control and information processing” (technical sciences). The point 11 of the specified Order by the dissertator is not broken.

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The “21st” of August 2020 y.



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