**ANNOTATION**

**Requirements: 1) The presence of ALL structural elements is required**

**2) Minimum length – 200 words**

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| **Structural****elements****can be presented as isolated or contextually used concepts** | **Comments** | **Examples** |
| **Relevance** | General description of the significance of the studied area, phenomenon. | **Relevance.** According to independent sources, cyber threats from insiders have increased over the past year by 47%, and the costs of their early detection and elimination of the consequences of attacks - by 31%; The average time to neutralize an insider is 77 days. This trend, among other things, indicates that the methods used to counter insider activities have reached a certain limit of their effectiveness. Taking into account the current circumstances, a combination of methods for identifying insiders seems to be a rational solution for large information systems.(An example of a separate concept) |
| Can be presented in the notation of (scientific) contradictions of the subject area. | **The relevance**of the topic lies in the fact (the research is due to the fact) that on the one hand ..., and on the other - ...(Example of a contextually used concept)or...which indicates the relevance of researching something... (Example of a contextually used concept)or**Relevance.** The main contradiction in the subject area, which lies in the traditional conceptual (mainly for officials of the information security system) description of threats vs. the need for a formalized recording of threats to information interaction in an integrated information security system for scientific research of a newly identified class of threats and the formation of scientifically based requirements for information ensuring an integrated information security system.(An example of a separate concept) |
| Identification of a gap in scientific knowledge that provides a basis for conducting research |  |
| **Target** | In technical sciences, the goal of research is formulated as measurable: increasing (efficiency, quality, speed, etc.) or reducing-reducing (costs, time, threats, etc.) or maintaining-ensuring (security, balance etc.) - achieved through WHAT? (Development, use, selection, classification, etc.). The following can be a solvable scientific problem - a problem the solution of which leads to the achievement of the research goal. | **The goal (of the research)**. Increasing the likelihood of detecting attacks by malicious robots with a coordinated behavioral strategy on self-organizing multi-agent robotic systems through the development of protection mechanisms based on trust and reputation metrics.(An example of a separate concept)or**The goal (of the research)** is to ensure security and increase the efficiency of organizing information interaction in an integrated information security system through its universalization. The scientific task is to develop scientific and methodological tools and information support for universal interaction in the organizational and technical system of the “ISZI” class.(Example of a contextually used concept) |
| Also, the purpose of the research can be formulated in terms of the theory of knowledge, as obtaining new knowledge about any phenomenon or process, which is equivalent to increasing (growing) the amount of knowledge in the subject area or reducing the deficit of knowledge (eliminating the gap in scientific knowledge) | **The goal (of the research)**. Finding ways to increase the effectiveness of countering insiders in large information systems by combining methods for identifying them.(An example of a separate concept)orTaking into account these circumstances, the goal (of the research) is formulated as obtaining new knowledge about the mechanism of trusted routing, for which it was studied for algorithmization, software implementation of procedures, evaluation of its effectiveness and recommendations for its improvement.(Example of a contextually used concept) |
| **Methods** | Information is provided on the methodological (models, methods, techniques) and technological-instrumental base (algorithms, stands, laboratory installations, software simulation simulators, etc.) used to solve the scientific problem | **Methods.** Analytical review of relevant scientific publications, conceptual modeling, formalization, categorical approach, expert and theoretical combination, synthesis, algorithmization.(An example of a separate concept)orThe work used **methods...,** as well as algorithms....(Example of a contextually used concept) |
| **Solution (result/results)** | The progress of solving a scientific problem is outlined. | **Solution**. Radio communication systems in telemetry and telemechanics complexes for active electrochemical protection systems of underground metal structures are considered. Requirements for radio exchange systems for data collection networks from remote control and measuring points of cathodic protection stations are formulated. An analysis of the applicability of known exchange protocols based on the specifications of the IEEE 802.15.4 standard and its software add-ons for such networks showed the need to develop specialized protocols at the application, network and data link levels. The results of the development of specialized network protocols of the application, network and data link levels are presented, which implement the data exchange modes required for the data collection networks under consideration while minimizing energy costs.(An example of a separate concept)orIn the course of solving a scientific problem, a generalized list was obtained and a partially formalized model was developed for combining qualitatively different methods for identifying insiders in large information systems; An expert forecast of 21 combinations of 7 of these methods was proposed, and a theoretical assessment of the success of their combination was given; a combined method for identifying insiders has been synthesized, the algorithm of which is specified in the form of pseudocode; The advantages and disadvantages of the author's approach and the results obtained are noted.(Example of a contextually used concept) |
| **Novelty** | Information is provided about the novelty of the work as a whole and/or the scientific results presented in it. The distinctive features of the author's development and/or results from those known/obtained before are indicatedTo indicate novelty, terms are used for the first time, in a new way, compared to .... in contrast to ..., taking into account the specifics, original/author's, etc. | **Novelty.** A fundamentally new class of threats to information security violations is modeled – threats of intermodular interaction. For the first time, threats to intermodular interaction in ISZ are written in analytical form (in the notation of predicate logic) using its formalized (in terms of set theory) entities.(An example of a separate concept)orFinite-difference models of receivers/transmitters have elements of scientific novelty, making it possible to implement a method of modulating chaotic signals that is fundamentally different from analogues.(Example of a contextually used concept)orThe scientific novelty of the work is determined by the author’s approach to combining methods based on a categorical space, which has axes along the following pairs of antagonistic elements: normal vs abnormal, static vs dynamic, subject vs object. Most combinations of methods are proposed for the first time.(Example of a contextually used concept) |
| **Theoretical and/or practical significance** | **Theoretical.** It is determined by fundamentally NEW (previously unknown to science) knowledge obtained by the author (authors) during the research. Algorithms and other non-methodological, technological results may not have theoretical significance; while models, methods, techniques - as “carriers” of NEW knowledge, are obliged. For example, for a model - establishing a previously UNKNOWN dependency. | **Significance (theoretical).**– formal conditions have been established for the implementation of threats to intermodular interaction in information information technology, leading to a violation of the confidentiality, integrity and availability of information, as well as to a decrease in the effectiveness, efficiency and resource efficiency of its work.– the necessity and sufficiency of a basic set of information exchange objects for organizing interaction in information information technology has been proven.– limits of applicability have been established... |
| **Practical.** It is determined by the useful properties that the obtained results have, which allow one to directly or indirectly approach the goal of the study; may also have an additional (unplanned) effect (delayed benefit, for the future). The key word is ALLOWS! | **Significance (practical).** The resulting analytical model allows us to study the conditions for the implementation of threats of intermodular interaction in information security systems at the stages of its design and modernization, using mathematical methods.(An example of a separate concept)Significance (practical). The results obtained in the work, in the future, can be used in the construction of various highly noise-resistant networks with multiple access, where an important requirement is, first of all, an extremely low peak factor of the data source signal.orThe practical significance of the developed algorithm is that it can be used in the construction of systems for protecting multi-agent robotic systems from attacks by malicious robots carried out in the process of information interaction when a swarm is solving a given task. The algorithm allows you to successfully repel coordinated attacks such as the “51 percent” attack.(Example of a contextually used concept) |