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Intelligent monitoring, modelling and regulation information traffic to specify the trajectories of the behaviour of organizational agents in the context of receipt of difficult-interpreted information

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Intelligent monitoring, modelling and regulation information traffic to specify the trajectories of the behaviour of organizational agents in the context of receipt of difficult-interpreted information

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Abstract. To prevent massive destructive actions committed by aggregated groups of organizational agents (people) it is necessary to establish the control over the intellectual dynamics of the behavioural activity of agents in relation to interrelated political, economic, social and other processes in the context of difficult to interpret information. Intellectual monitoring, modeling and regulation of information traffic creates the possibility of operating with the working parameters of the multiparameter monitoring system natural, technical and social processes. The regulation of the work of a set of elements of a controlled set of information and computing capacities in the framework of increasing the observability of information and telecommunication networks, providing agents with information about what is happening, allows the agent to receive information on the topics identified during the monitoring (informational irritants), change of communication services or rules of their provision, etc. to specify the trajectories of organizational agents.

1. Introduction

The management of the intellectual dynamics of the behavioural activity of organizational agents (people) in relation to interconnected political, economic, social and other processes is an important direction in preventing the catastrophic nature of massive destructive actions committed by aggregated groups of agents [1].

2. Integration of various methods of psychoengineering, distant influence, psychocorrection and psychosensing

If the agent constantly receives information about an object (country, political leader, corporation, etc.) or event (informational “stuffing” of a particular blogger, the next stage of reform, etc.), it is possible to manipulate the vector benevolent or irritable perception of information at the unconsciously-reflexive level (“transfer of learning”). Impact tool: when the received information package is accompanied by an information marker, implemented as an additional informational message of the media, or a temporary dotted change in the rhythm of information transfer (the number of resolution points on the



TV or computer screen, the temporary appearance of unauthorized but audible noise transmissions, etc., or a partial change in the frequency of the broadcasting pulses of television or radio signals).

That is, further integration of various methods of psycho-engineering, distant influence, psycho-correction and psycho-sounding with synchronization of psychophysiological and psycho-semantic influences during the convergence of the process of perceiving informational stimuli, where the manipulative concentration of agents and the interpretation of information are "combined" into a single composition within the framework of human interpretation - pictures of the surrounding real and fictional world with flowing lines of behaviour [2].

It is necessary to develop a set of monitoring (testing) of agent behaviour in information and telecommunication systems on a wide range of profiles (news, education, entertainment, participation in network communities, etc.), which will allow to highlight its interests, motivation, patterns of interpretation of what is happening, serving as the basis quasi-independent choice of actions based on the analysis of the retrospective, the current situation and modelling the development of the situation [3; 4]. Such testing, as an independent computer program, can automatically identify an individual agent (person), adapt to his addictions and, in permanent mode, specify the details of his psycho-semantic subjectivity. A full-fledged psycho-semantic portrait of an agent can be built even without his direct connection with openly destructive elements (people, sites, territories, demonstrations, etc.), but only on the basis of indirect data (lack of interest in official news programs, switching off the gadget or switching channel when speaking or transmitting news about a particular political leader, watching only foreign films or avoiding watching films on patriotic-historical topics, etc.) [5].

3. The influence of electromagnetic fields and the corresponding frequency ranges considering the biorhythms of a specific biological agent

Electromagnetic fields of natural or man-made origin can provoke a desynchronization of brain processes, manifested in the dominance of rapid fluctuations (beta, gamma), acting as a source of brain activity disorders.

Low-frequency electromagnetic fields penetrate with low attenuation almost everywhere - into the soil, into the water column, into confined spaces.

At the same time, the strongest effects appear within the framework of frequency acquisition and phase matching (synchronization) of electromagnetic effects and oscillatory processes of biological systems with the possibility of resonance. Obviously, the magnitude of the response of living systems (amplitude modulation) and the reorganization of the bio-rhythm of physiological processes (frequency modulation) can also change.

When exposed to low-frequency electromagnetic fields or if the microwave modulation frequency falls into the spectrum of its own rhythmic activity, for example, the brain, the amplitudes of individual rhythms of electroencephalography may increase.

The result may be deregulatory disorders, accompanied by a violation of the general functional state and pathological abnormalities in the work of various body systems.

The increase in the intensity of electromagnetic fields is characterized by changes in spectral power in all frequency ranges of the brain: for delta, theta and be-ta-frequencies most pronounced in the frontal areas, for the alpha range in characteristic alpha activity of the occipital and parietal areas brain.

These changes lead to a functional reorganization of the activity of the cortex of the big hemispheres and subcortical centres in accordance with the processes of self-regulation of the functional state of the brain.

At the same time, within each of the frequency bands of the main rhythms of electroencephalography there is a narrow frequency sub-band, which is most sensitive to changes in electromagnetic fields. Unidirectional synchronous oscillations in different subjects were detected in these frequency subbands.

In fact, the influence of intense electromagnetic fields and the corresponding frequency ranges, considering the biorhythmic of a specific biological object, introduces many people into an altered state of consciousness that is close to trance. Such a state blocks the majority of human conscious reactions (including self-control, caution in perception, etc.) in case of discrepancies in the received, but outwardly

convincing and seemingly reliable information and the surrounding reality. That is, it facilitates the impact on it, including the use of neuro-linguistic programming elements for this, with correction or even a complete change of the reflexive matrix (the matrix of key reflective reactions) with the corresponding change and fixation of the new model of interpretation of the events.

The influence of electromagnetic fields and the corresponding frequency ranges, taking into account the biorhythms of a specific biological agent object (detected indirectly through monitoring and analysing the dynamics of using electronic communication services, for example, analysing the millisecond reaction of pressing the keys of the gadget and its correlation with the intensity of electromagnetic fields) can enhance the effects of imprinting the cognitive-reflexive model and the corresponding reflexive matrices through an automated adjustment - dynamic adaptation intensity ICT exposure to the agent selected during the monitor-ring clip (information stimuli).

In this case it is necessary to operate the working parameters of multiparametric monitoring of the system "bioelectrical activity of the brain – psycho-semantic subjectivity of the person (agent) - imprinted reflexive matrices - informational stimuli" on various types of technical systems that receive data on natural, technical and social processes. With appropriate computing power, the received information is processed from information systems for general and individual use, communication systems, technological equipment containing intelligent devices (smart grids, sensors, chips, programmable controllers, etc., which allow them to receive data remotely), on processes that were previously inaccessible for analysis, but which are involved in the configuration of metastable states of personalities as a driver of interrelated political, economic by social, social and other processes.

3.1 Increasing the observability of the analyzed psycho-semantic subjectivity of the person (agent)

Considering ongoing processes of convergence of information, telecommunication and computing services in global information networks and information systems, practically any user access to electronic content regardless of equipment, communication channel and communication method can be considered a particular case of accessing a quasi-integrated unified distributed database of electronic data. In this database, if necessary, the appeal of a specific person, even hiding his identity, will soon be possible to identify in terms close to real time. In addition, traces of access to electronic content now remain there for a long time, allowing you to apply the accumulated methods of monitoring analysis, user identification, identifying its relationship with other users, belonging to explicit and implicit groups, etc.

A modern computer, smartphone or TV remote with intelligent functions allows not only to accurately identify a person by the manner and speed of keystrokes, but also to determine his positive / negative attitude to the current electronic content present on the screen and even identify the degree of irritation and aggression in relation to this content. These same devices can fix not only the territorial point of a person's location, but also link it with the intensity indices of the electromagnetic fields at this point, change the parameters of the equipment located near this point, affecting the electromagnetic fields. Soon, gadgets will be able to record the temperature, blood pressure, heart rhythms, and so on. Biorhythms of a person.

In our case, the results of monitoring (testing) should provide the possibility of increasing the observability of the analyzed psychosemantic subjectivity of the person (agent) in the context of ambiguity or lack of information about it for a reasonable prediction of transitions between the quasi-stationary states of the intellectual dynamics of behavioral activity emergency conditions.

Combining the selected data from all possible forms of electronic content into a package of information about the psycho-semantic subjectivity of an individual (agent), combining structured, complex-structured and conditionally structured data, makes it possible to detect its behavioral activity and hidden qualities that characterize the sociopathic tendencies of the individual (agent), explicit or hidden political or religious affiliation, phobias, ways of informal self-realization in the social sphere, network and hierarchical relationships, role structure in the family and in the community, by operating the volume-proxy resources, etc.

The starting point of the development of the destructive activity of specific individuals is receiving information from the media (the dynamics of informational stimuli).

It is intended to develop a subject-adapted configuration of the basic characteristics of a complex of monitoring systems and the management of the formation of individual and group cognitive-reflexive models for identifying and interpreting the pro-source, serving as the source of the actions of individuals and their groups. Here it is necessary to identify system-parametric relationships (relationships), incl. the magnitude of the flows of information affecting an individual (from electronic media, from colleagues in the network community, etc.) and its perception, penetration into the level of unconsciously-it-named ideological stereotypes and use for identification and interpretation of what is happening.

Configuring ways of communicating information to a consumer will create a basis for forming based on domestic cognitive semantic protocols, a framework for imprinting agents of semantic transcription models for agents to interpret "imprints of reality" [6, 7].

4. Results

The regulation of the work of a set of elements of a controlled set of information and computing capacities within the framework of increasing the observability of information and telecommunication networks that provide agents with information about the current situation allows the agent to manage the process of receiving information from electronic media by the agent during the monitoring), change of communication services or the rules of their provision, the possibility of the presence of incognito agents on the Internet, etc.

The mechanisms of optimization monitoring and processing of data on the sociopathic reactions of agents arising in one of the iterations in the implementation of higher brain functions, such as sensory perception, motor commands, spatial thinking, conscious thinking and language should be aimed at creating software interfaces that allow regulate the state of the aggregated groups of agents that make up the segment of society.

Thus, programming of cognitive-behavioural stereo-types will be implemented as a basis for event chains of agents' actions in order to properly function social control systems based on people's interpretations of the surrounding real and virtual world with flowing lines of behaviour.

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References

- [1] Ageev A.I., Loginov E.L., Shkuta A.A. 2018 *Economic strategies* **20** 70–87
- [2] Tumanyan A.G., Bartsev S.I. 2016 *Computer Research and Modeling* **8** 941–950
- [3] Raikov A.N. 2016 *Economic strategies* **18** 172–179
- [4] Golubev V.I. 2016 *Information technologies* **22** 233–239
- [5] Loginov E.L., Eriashvili N.D., Bortalevich V.Y., Loginova V.E. 2017 *Vestnik Moskovskogo universiteta MVD Rossii*. 5 250–256
- [6] Loginov E.L., Shkuta A.A. 2017 *State service* **19** 24–29
- [7] Zakharova A., Vekhter E., Shklyar A., Zavyalov D. 2017 *Communications in Computer and Information Science* **754** 215–230