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INTELLIGENT DECISION SUPPORT SYSTEM FOR EPIDEMIOLOGICAL DIAGNOSTICS. II. INFORMATION TECHNOLOGY DEVELOPMENT^{1,2}

Abstract. The article projects the components of the intelligent decision support system for epidemiological diagnostics and investigates their interaction with the user. The system includes a bank of models and machine learning methods, a bank of population dynamics models, visualization and reporting tools, and management decision-making unit. The concept of information technology to ensure biosafety of the population is provided. A model of specified information technology use cases is developed and a sequence diagram is constructed. A model of information technology components and ways of their deployment on a server are proposed.

Keywords: decision support system, information technology, epidemiological diagnostics, machine learning, population dynamics.

INTRODUCTION

This paper continues the study [1] devoted to the development of an intelligent decision support system for epidemiological diagnostics. Based on the analysis of the peculiarities of decision-making in the field of epidemiology and public health, the architecture of such an information system was proposed, taking into account the formalization of its main characteristics. In general, this research is based on the concept of developing a decision support system for the control of epidemic morbidity, proposed in [2].

The COVID-19 pandemic dictates the need to develop an integrated intelligent decision support system for epidemiological diagnostics. The introduction and use of such an information system will make it possible to make timely and scientifically sound decisions on the use of control measures that restrain the development of epidemics. The proposed information system will be useful not only during the fight against the epidemic of coronavirus infection, but also in other emerging diseases.

To describe the information technology of intelligent information system of epidemiological diagnostics the UML 2.5 was chosen.

It has a perceivable and expressive visual modeling language, specially designed for the development and documentation of models of complex systems for various

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