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Research on Cyber-Physical Systems Security Authors: *Georgi Tsochev & Radoslav Yoshinov*



The monograph examines the security of cyberphysical connections in terms of critical information infrastructure. Its practical application finds in one place the latest trends in threats until 2020, to find information about the cyber attacks themselves and solutions on how to protect systems SCADA and IIoT. The critical such as infrastructure in the country and abroad and the cyber-physical systems are presented as part of an information structure.

The monograph focuses on the problems related to the protection of information and the computer network from the point of view of cyber-physical systems. The topicality of the issues discussed in the monograph is indisputable, given the current trends and the new European regulation related to information protection GDPR. The analysis of the modern means of information protection is a proof of the good knowledge of the topic by the authors, both in terms of the existing threats and opportunities for violating the security perimeter, and in view of the current state of scientific achievements in terms of developed approaches, methods and algorithms.

The monograph is well structured, and at the beginning an introduction is made about what is the critical infrastructure and what are the challenges facing it in the country and abroad. The first chapter provides an overview of cyberphysical systems and their application in terms of computer networks in industrial control systems. The second chapter discusses trends in security risks to cyberphysical systems. The "Chain of Murder" model is presented and the security assessment criteria are presented. An analysis of the current state of cyber-threats to cyber-physical systems has been made. Chapter 3 defines the taxonomy of threats to cyber-physical systems. An overview of the different taxonomies of cyber-threats and the types of cyber-attacks is made. The various intrusion detection and prevention systems are described. Chapter four presents some recommendations for increasing the cyber security of industrial systems and systematic recommendations for increasing the security of cyber physical systems. At the end, there is a summary in English, which briefly describes the content.

The monograph would be useful for specialists in the field of computer and software engineering, students, doctoral students, teachers and researchers in the field of mathematics and informatics, computer science, computer systems and technology, computer and software engineering and information technology in the industry.

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