

Models, Methods and Technologies for Protection of Critical Infrastructures from Cyber-Physical Threats

Authors : Ivan Župan

Abstract : Critical infrastructure is essential for the functioning of a country and is designated for special protection by governments worldwide. Due to the increase in smart technology usage in every facet of the industry, including critical infrastructure, the exposure to malicious cyber-physical attacks has grown in the last few years. Proper security measures must be undertaken in order to defend against cyber-physical threats that can disrupt the normal functioning of critical infrastructure and, consequently the functioning of the country. This paper provides a review of the scientific literature of models, methods and technologies used to protect from cyber-physical threats in industries. The focus of the literature was observed from three aspects. The first aspect, resilience, concerns itself with the robustness of the system's defense against threats, as well as preparation and education about potential future threats. The second aspect concerns security risk management for systems with cyber-physical aspects, and the third aspect investigates available testbed environments for testing developed models on scaled models of vulnerable infrastructure.

Keywords : critical infrastructure, cyber-physical security, smart industry, security methodology, security technology

Conference Title : ICCTAI 2023 : International Conference on Computational Techniques and Artificial Intelligence

Conference Location : Barcelona, Spain

Conference Dates : August 10-11, 2023