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Faculty of Engineering and Technology

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Towards a trainee-centric Cyber Range Training Platform

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Approval Form

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Abstract

In the last decades, cyberattacks have targeted the healthcare sector because of the sensitive data it handles, for instance, Personal Health Information (PHI), Electronic Health Records (EHR), medical history, financial details, prescription data, etc. This study focuses on the cyber threats that affect the healthcare sector and the vulnerabilities within the healthcare sector that make it a prime target for cyberattacks. We design a questionnaire for medical professionals and cybersecurity teams to gather relevant data about the insights of the participant's institutions to identify and address the current challenges. Also, a Cyber Range Simulation and Training platform for healthcare stakeholders is proposed with the back-end design with its components developed. We focused on presenting the platform's prototypes that offer a user-friendly approach for developing training scenarios tailored to healthcare professionals and security experts within organizations. Moreover, we propose an approach of using open-source tools to collect data from a Security Information Event Management (SIEM) tool and present the way in which these tools can work together in (1) collecting the data related to the healthcare organization into the Cyber Range Simulation and Training Platform and (2) the creation of the training scenarios based on the Cyber Range Security Assurance model of the organization.

Table of Abbreviations

Abbreviations

CRSA	Cyber Range Security Assurance
CRST	Cyber Range Simulation and Training
CSLAs	Cyber security-focused Service Level Agreements
CUT	Cyprus University of Technology
CYRA	Cyber Range Assurance Platform
EHR	Electronic Health Record
EU	European Union
GDPR	General Data Protection Regulation
*GNS*3	Graphical Network Simulator 3
HIPAA	Health Insurance Portability and Accountability Act
NIS	Network and Information Systems
PHI	Personal Health Information
PRC	Privacy Rights Clearinghouse
SIEM	Security Information Event Management
SLAs	Service Level Agreements

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