CyBOK

The Cyber Security Body of Knowledge

Tabular representation of CyBOK Broad Categories, Knowledge Areas and their descriptions

Version 1.1
July 2021
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The CyBOK project would like to understand how the CyBOK is being used and its uptake. The project would like organisations using, or intending to use, CyBOK for the purposes of education, training, course development, professional development etc. to contact it at contact@cybok.org to let the project know how they are using CyBOK.

CHANGE LOG

Version date	Version number	Changes made
July 2021	1.1	Updated in line with CyBOK version 1.1
July 2020	1.0	

Human, Organisational and Regulatory Aspects	
Risk Management & Governance	Security management systems and organisational security controls, including standards, best practices, and approaches to risk assessment and mitigation.
Law & Regulation	International and national statutory and regulatory requirements, compliance obligations, and security ethics, including data protection and developing doctrines on cyber warfare.
Human Factors	Usable security, social & behavioural factors impacting security, security culture and awareness as well as the impact of security controls on user behaviours.
Privacy & Online Rights	Techniques for protecting personal information, including communications, applications, and inferences from databases and data processing. It also includes other systems supporting online rights touching on censorship and circumvention, covertness, electronic elections, and privacy in payment and identity systems.
Attacks and Defences	
Malware & Attack Technologies	Technical details of exploits and distributed malicious systems, together with associated discovery and analysis approaches.
Adversarial Behaviours	The motivations, behaviours, & methods used by attackers, including malware supply chains, attack vectors, and money transfers.
Security Operations & Incident Management	The configuration, operation and maintenance of secure systems including the detection of and response to security incidents and the collection and use of threat intelligence.
Forensics	The collection, analysis, & reporting of digital evidence in support of incidents or criminal events.
Systems Security	
Cryptography	Core primitives of cryptography as presently practised & emerging algorithms, techniques for analysis of these, and the protocols that use them.
Operating Systems & Virtualisation Security	Operating systems protection mechanisms, implementing secure abstraction of hardware, and sharing of resources, including isolation in multiuser systems, secure virtualisation, and security in database systems.
Distributed Systems Security	Security mechanisms relating to larger-scale coordinated distributed systems, including aspects of secure consensus, time, event systems, peer-to-peer systems, clouds, multitenant data centres, & distributed ledgers.
Formal Methods for Security	Formal specification, modelling and reasoning about the security of systems, software and protocols, covering the fundamental approaches, techniques and tool support.
Authentication, Authorisation & Accountability	All aspects of identity management and authentication technologies, and architectures and tools to support authorisation and accountability in both isolated and distributed systems.
Software and Platform Security	
Software Security	Known categories of programming errors resulting in security bugs, & techniques for avoiding these errors—both through coding practice and improved language design—and tools, techniques, and methods for detection of such errors in existing systems.
Web & Mobile Security	Issues related to web applications and services distributed across devices and frameworks, including the diverse programming paradigms and protection models.
Secure Software Lifecycle	The application of security software engineering techniques in the whole systems development lifecycle resulting in software that is secure by default.
Infrastructure Security	
Applied Cryptography	The application of cryptographic algorithms, schemes, and protocols, including issues around implementation, key management, and their use within protocols and systems.
Network Security	Security aspects of networking & telecommunication protocols, including the security of routing, network security elements, and specific cryptographic protocols used for network security.
Hardware Security	Security in the design, implementation, & deployment of general-purpose and specialist hardware, including trusted computing technologies and sources of randomness.
Cyber-Physical Systems Security	Security challenges in cyber-physical systems, such as the Internet of Things & industrial control systems, attacker models, safe-secure designs, and security of large-scale infrastructures.
Physical Layer & Telecommunications Security	Security concerns and limitations of the physical layer including aspects of radio frequency encodings and transmission techniques, unintended radiation, and interference