

A Cyber Counterintelligence Competence Framework



Thenjiwe Glyndah Sithole (216088659)

Supervisors: Dr J du Toit & Prof SH von Solms

Introduction

Offensive cyber operations, cyber intelligence-gathering, and other aggressive cyber activities are increasing in sophistication, magnitude and quantity and are becoming stealthier. A practical, proactive strategy for any organisation is to align its cybersecurity approach with counterintelligence (CI) practices, thereby adopting and investing in cyber counterintelligence (CII).

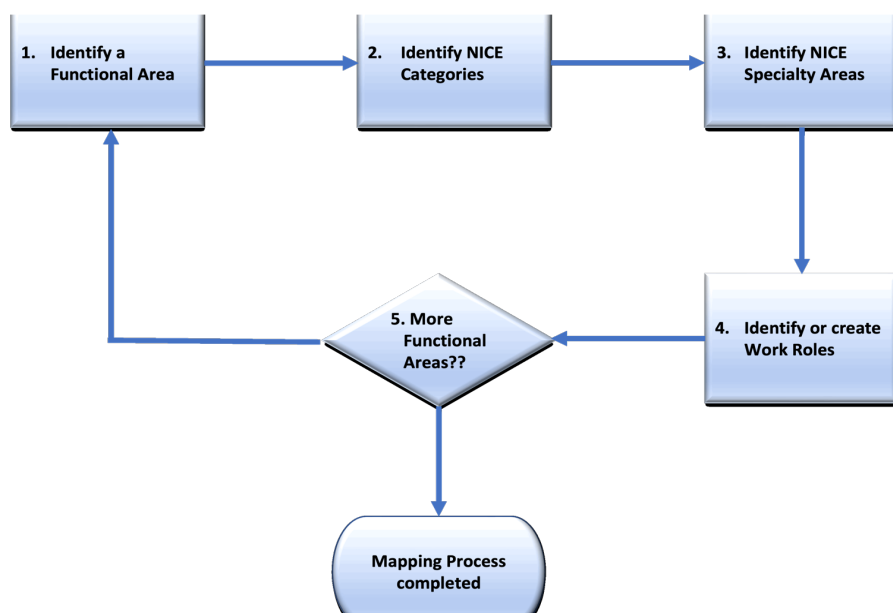
Problem Statement

CCI is an emerging multi-disciplinary field that lacks a well-defined and clear categorisation of the CCI Job Roles

Objective

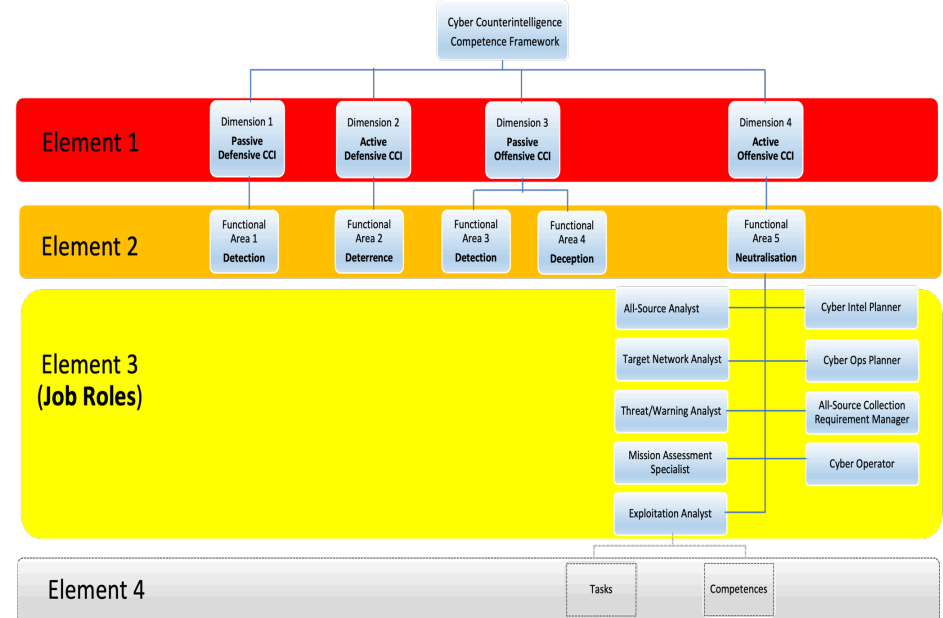
To identify CCI Job Roles logically and categorically – organised according to the CCI Dimensions and Functional Areas.

Approach - Identifying Job Roles



A 5-step mapping process

Job Roles – Offensive CCI (Neutralisation)



Conclusion

A 5-step mapping process for identifying Job Roles, using a NICE Framework as a base framework, was used. The results are limited to the Job Roles for one Functional Area; nine (9) Job Roles appropriately matched the Functional Area Neutralisation's purpose and functions. Future work will involve the identification of Job Roles for passive defensive CCI – detection, Active Defensive CCI – Deterrence and Passive – Offensive CCI – Detection and Deception.

References

- Guemba, B. et al., 2022. The Emerging Threat of AI-driven Cyber Attacks: A Review. *Applied Artificial Intelligence*, 36,(1), pp. e2037254-2378.
- Jaber, A. & Fritsch, L., 2023. *Towards AI-powered Cybersecurity Attack Modeling with Simulation Tools: Review of Attack Simulators*. 249-257, International Conference on P2P, Parallel, Grid, Cloud and Internet Computing.
- Meier, R. et al., 2021. *Towards an AI-powered Player in Cyber Defence Exercises*. Tallinn, Estonia, 2021 13th International Conference on Cyber Conflict Going Viral.
- Sithole, T. & du Toit, J., 2022. *A Cyber Counterintelligence Competence Framework*. Chester, 21st European Conference on Cyber Warfare and Security ECCWS 2022.
- World Economic Forum, 2022. *The Global Risks Report 2022, 17th Edition, Insight Report*, Geneva: World Economic Forum.