

Mapping ~ NSA/DHS Knowledge Unit to NICE Framework 2.0

Mapping Introduction. A mapping between the National Security Agency (NSA) and the Department of Homeland Security (DHS) National Centers of Academic Excellence in Cyber Defense (CAE-CD) Knowledge Units (KUs) and the National Initiative for Cybersecurity Education (NICE) Workforce Framework 2.0 has been developed. Since each of the CAE-CD and the NICE Frameworks were developed for different purposes, cybersecurity education vs. cybersecurity workforce, the mapping does not result in one for one relationship between the two. Many parallels and relationships can be drawn between these two Frameworks and by exploring those relationships, we can better understand the areas within the current CAE-CD KU construct on which to focus where opportunities for refinement or change may be needed. The mapping will allow further analysis and review needed to gain a greater understanding of the relationship between the Frameworks.

Mapping Goal. The goal of the mapping exercise was to examine the relationship between CAE-CD KUs and NICE Framework. When the NSA / DHS National CAE-CD Program Office began exploring the relationship between the KUs and the NICE Framework, it was decided that the most suitable level to explore a relationship was at the NICE competency level. Competencies in the NICE workforce framework are areas of expertise required for successful performance of a role or job function. This Competency list displays the types of workforce characteristics an individual must exhibit to successfully perform his/her specific role. The Framework defines competencies through the association of KSAs.

Mapping Process & Raw Data. To develop an understanding of the relationship between the two Frameworks, the CAE-CD Program Office created a spreadsheet with a preliminary mapping between the CAE-CD KUs and NICE competencies. Before these results were further promulgated, Government Subject Matter Experts (SMEs) with varying expertise were enlisted to review and validate the mapping. Participating SMEs reviewed the series of worksheets consisting of proposed and mappings (associations) between CAE-CD KUs NICE competencies keeping in mind the related Knowledge, Skills, and Abilities (KSA). When

looking at the NICE competencies to determine their applicability to a particular KU, the underlying associated KSAs for each of the particular competencies were taken into consideration. SMEs were asked to validate the mapping and provide feedback as to whether new relationships should occur or whether existing relationships should be modified. All SME mapping reviews were compiled to determine a collective relationship based off of their feedback for each KU. Within the spreadsheet, there is a tab for each particular KU with the associated description, topics, outcomes, and references. The spreadsheet is organized with the core KUs, as listed in the CAE-CD requirements, and then followed alphabetically by the optional KUs. Below the KU information is the proposed related NICE competencies with the associated KSAs.

Looking Ahead. This mapping demonstrates a relationship between the CAE-CD KUs and NICE Framework to allow for further exploration of the CAE-CD KUs content and makeup. Although the origin of the CAE-CD KUs and NICE Framework came about for different purposes and audiences, they are complimentary in nature. We understand that there will be differing opinions and perspectives on the relationships for any particular CAE-CD KU and NICE competencies. The relationship within the spreadsheet is not a final mapping but a working relationship that will evolve over time. The relationship will continue to develop as we receive input from others, in particular Academia. A forum has been setup in the CAE Community Website where the CAE-CD KUs and the NICE Framework relationship can be discussed.

Additional Information

- **CAE Community Website & Forum for Mapping Discussion:** www.caecommunity.org (Forums can be found under "Discussions" on top right – account needed to read / respond in Forums)
- **CAE-CD KU Information & Mapping spreadsheet:** www.iad.gov/NIETP//CAERequirements.cfm
- **NICE Workforce Framework 2.0 Information:** <http://niccs.us-cert.gov/training/tc/framework>