Dear Sir/Madam,

Please find attached our responses to the 'Request for Comment' on the NICE Framework.

We look forward to reading the results of this callout.

Kind regards,

Di

Dianne Ferguson
Centre Manager
UNSW Canberra *Cyber*
UNSW Canberra

Location: Lower Ground, Building 13, Northcott Drive
Australian Defence Force Academy

UNSW Canberra Cyber

NIST – Request for Comments
NICE Framework 2020

Improvements to the NICE Framework

1. **Describe what components of the NICE Framework have been most useful to you and why.**

- Defining 'Categories' (in Cyber Specialty areas) down to seven broad descriptors has been useful, as it has enabled us to encourage customers to use the framework to define their workforce. – Enabling Training and Education providers to use a nomenclature to more effectively communicate with students and employers.
- Mapping the Knowledge, Skills, Abilities to our Masters courses and Professional Education Short Courses to define learning outcomes and reference our courses back to the NICE Framework 'work roles'. – Enabling students to select courses they require for their future careers or current roles.
- The ability to drill down into the KSATs from specific work roles and job roles, and the ability to identify specific job roles related to particular KSATs has been useful in helping us understand the workforce and what is required. It also gives us a basis from which to 'check in' with employers to see if these are the TASKs their organisations have and if they (the employers) agree with the identified KNOWLEDGE, SKILLS and ABILITIES that achieve these tasks.
- The Framework itself has allowed us to review our entire program and understand where we have gaps and therefore opportunities for growth.

2. **Describe what components of the NICE Framework have been least useful to you and why.**

Not necessarily less useful but the naming of the work categories are quite esoteric and are challenging to meaningfully incorporate into marketing collateral whose audience is targeted at prospective students who don't know about the framework.

For the layperson, the NICE concept is quite hard to understand, specifically the mapping of workforce roles to education outputs and career ambitions. Sometimes "less is more", e.g. 'I want to be a pentester, or I want to be an analyst, or work in a SOC, how do I get there?' There are some quite distinct job roles (as advertised in the media, job sites, etc.), which need a simpler explanation of the pathway to get there.

Perhaps for the Framework to exert the most influence, the whole spectrum might need to consider changing to adopt the nomenclature established (and NIST may need to listen/consult with industry to adjust the language).

That is to say globally,

- Human Resources (employers) would need to change position descriptions, job titles, recruitment language, etc.
- Knowledge providers would need to change course descriptions, program designs, etc.
- Industry/Government would need to adopt the language and map their organisations to the framework.

And the Framework needs to continue to be a 'living document'

3. **Share any key concepts or topics that you believe are missing from the NICE Framework. Please explain what they are and why they merit special attention.**

It would be useful, particularly for students wanting to utilise the framework, for work roles to have suggested education/training pathways mapped to them in addition to the KSATs related to the role.

4. **Describe how the NICE Framework can be more useful to a variety of audiences (i.e. employers, employees, education and training providers, learners, small enterprises, etc.).**

The NICE Framework would be more useful for education and training providers if there were more guidance or advice as to how to map to the framework in a more rigorous manner. At the moment it seems like any provider could potentially say their courses map to the framework, but as this isn't checked or certified by a third party their claims could be misleading or an outright fabrication.

5. **Describe the potential benefits or challenges experienced when aligning the NICE Framework more closely with other related standards, guidance, or resources (e.g., NIST Framework for Critical Infrastructure Cybersecurity, NIST Privacy Framework, other NIST Special Publications, etc.).**

N/a

6. **Explain if you think the scope of the covered workforce as stated by the NICE Framework needs to be adjusted.**

It might be relevant to include roles within the mobile/app space and social media.

7. **Describe any improvements that might be made in the current organization of the NICE Framework and its major components such as Categories, Specialty Areas, Work Roles, Knowledge, Skills, Abilities, and Tasks.**

Providing additional roles that would be considered to be similar to the current work roles listed would be useful. At the moment the list is quite rigid and it can be hard to place where a work role might fall within the framework, particularly as a user of the framework based outside the US where different variations of job titles are used.

It would be highly beneficial to be able to contrive a level of competency for each and a way of testing that competency so individuals could understand where they are on the spectrum of expertise and knowledge providers can pitch their materials at the correct level. Currently, there are a number of KSAs that are quite broad and could be applied to any person working in information security. Whilst it is necessary to acknowledge these KSAs, it would be beneficial to have a level of competency developed.

8. **Describe how the NICE Framework can best document and describe Knowledge, Skills, Ability, and Task statements as well as Competency Areas.**

The search function on the NICCS website has been extremely useful and is utilised often. It would be beneficial if it could extend to providers outside of the USA. Currently, to have courses/programs 'connected' to the search, the provider needs to be within the USA or affiliated with.

UNSW Canberra would like to have its programs listed on the NICCS website as a provider to offer our distance/online courses but we would need to have our mapping reviewed and certified, to be a recognised provider.

9. **Explain whether the NICE Framework indicates which Knowledge, Skills, and Abilities could be considered as foundational for all workforces that regularly interact with networks, systems, and data in cyberspace.**

In our experience, the framework doesn't currently do this. This would be a useful feature to have on the NICCS website search function. To be able to filter KSATs that are considered foundational, advanced, more specialised etc. The same applies to the work roles themselves and if they would be considered entry-level, junior, mid, senior etc.

10. **For each NICE Framework work role, please provide an informative reference that you would like the NICE Framework Resource Center to reference.**

N/a

11. **Describe which components of the NICE Framework you think are best left as static content and would not change until the next revision and which components could be managed as dynamic content (i.e., more frequent changes or updates to accommodate new information as it becomes available).**

This is going to be challenging but is crucial for the Framework to remain relevant and trusted.

The broader categories could remain static but work roles and KSATs should be dynamically updated to keep up with the expansion of the cyber security industry and with educational offerings.

However, core KSATs should be identified and remain as static as possible. Too much fluidity in a framework makes it very difficult and time consuming to work with. Much like legislation, which is dynamic, the overarching 'laws/rules' need to be reliable and the subsections flexible.

12. Describe the value or risk in different organizations, sectors of the economy, or organizations with classified versus unclassified workforces to develop customized versions of the NICE Framework tailored to their specific circumstances.

The main benefits of the Framework are to create a common classification, which allows every sector to identify their current workforce, plan for growth, appropriately fund information security and individuals to understand what KSAs they need in order to fulfil the Ts identified in each sector's defined work roles.

There is value in organisations being able to customise the NICE Framework to their specific circumstances but the risk is losing all benefit in a shared nomenclature, which would result in the main benefit of Framework being diminished or void.

Organisations that choose to create their own version should need to establish a key to refer to the 'common' or 'original' Framework. If the organisation used it's own adaptation as an 'internal document' and used the original framework in external communications, it may work.

This would probably end up overcomplicating things.

Awareness, Applications, and Uses of the NICE Framework

1. Describe the extent of current awareness of the NICE Cybersecurity Workforce Framework within your organization or sector or among individuals.

At UNSW Canberra Cyber we have been utilising the framework for our professional education courses since mid 2019, and are now expanding this into our postgraduate course offerings. Awareness throughout the rest of the university is limited, but we also starting to push the messaging of the framework and its benefits out into the organisation.

2. Describe how you or your organization was introduced to the NICE Framework.

A need for a common language to communicate with clients and students led to the framework being found through research in 2018. After reading the information available and considering if it was appropriate for our organisation, we made the decision to map our Professional Short Course materials to the Framework.

3. Describe the greatest challenges and opportunities for increasing awareness and use of the NICE Framework.

Challenges include communicating the ideas, uses and benefits of the framework to lay persons and, effectively and accurately mapping courses to the framework.

Opportunities for awareness lie in greater collaboration between education providers, industry bodies (ex: Australian Computer Society) and government.

AustCyber has been proactive in promoting the NICE Framework to education and training providers as well as the Government and private enterprise within Australia.

4. **Explain how you are currently referencing (i.e., applying or using) the NICE Framework and what plans, if any, you have for referencing it during the next year.**

   All professional education courses have been mapped (as best as possible) to the framework, with plans to expand this to postgraduate and undergraduate courses.

5. **If you are an employer, describe how your organization uses the NICE Framework to develop position descriptions, guide skill-based training, facilitate workforce planning, or other uses.**

   N/a

6. **If you are an education or training provider, describe how your organization uses the NICE Framework to develop or describe education and training content or associated credentials.**

   At the moment the course content is mapped to the framework as is, while plans to use the framework as a starting point and develop content around specific KSATs are currently being developed.

   We have updated the outlines of our Professional Education Short Courses to indicate which 'work roles' the materials in our courses provide KSAs in. Our aim is to show what work roles would directly benefit from a course as well as demonstrating others that have 'some relevance'.

   We also refer to the NICE Framework in our discussions with new or existing customers. In assisting our customers with determining the type of 'cyber training and education' that is appropriate for their organisation, we refer to the Framework. Quite often, we find that the customer is not familiar with the Framework and finds it useful as a way to identify the sections of their workforce, establish a skills matrix to then do a training needs analysis.

7. **If you are an employee, job seeker or learner, describe how you use the NICE Framework for communicating your competencies or skills to employers, identifying training or professional development needs, or navigating your career pathway.**

   N/a

8. **Describe any tools, resources, or publications that exist that reference or would benefit by referencing the NICE Framework.**

   N/a

9. **Describe any tools, resources, or technical support needed to increase the application and use of the NICE Framework.**

The main issues are awareness and making the key ideas of the framework easier to convey in a marketing sense,

10. Propose any improvements for the application and use of the NICE Cybersecurity Workforce Framework.

If the Framework was mandated to be used within the public sector like it is in the US that would help enormously to encourage the use of it in Australia.