Proposal for IGF policy incubator programme

Ensuring students have the cybersecurity skills needed by industry

The United Nations Secretary-General Antonio Guterres has recommended that the IGF should serve as a policy incubator that makes recommendations for policymakers worldwide. Following their joint announcement at the IGF in Kyoto of their plan to establish an innovative hub on cybersecurity skills, the IGF Dynamic Coalition IS3C and the Polish national research institute NASK request the MAG to designate the first phase of the project in 2024-25 as a pilot IGF policy incubator programme.

The cybersecurity skills pilot programme will have the following specific goal: to create a blueprint for tertiary cybersecurity education curricula and industry training modules that can be implemented in all regions, adapted where necessary to meet individual countries' skills and capacity requirements.

It is suggested for the general oversight and reporting of this IGF pilot policy incubator programme that two MAG members are appointed to act as liaisons to the IS3C-NASK expert working group running the project.

The cybersecurity skills gap

The need to align the curricula of tertiary cybersecurity education and vocational training bodies so that they meet more directly the requirements of industry and the technical community is a longstanding challenge that has not been fully addressed.

Teaching students about the Internet's architecture, technical standards and security goes to the core of Internet governance, effective cybersecurity frameworks and the protection available for individual and corporate users of the Internet.

Research undertaken by the Dynamic Coalition on Internet Standards, Security and Safety (IS3C) has identified major shortfalls in cybersecurity knowledge and skills amongst school leavers and graduates, including those who intend to work in the cyber sector and its technical community[1].

IS3C conducted interviews in all regions. They show that the lack of hard, technical skills and soft, transversal skills in graduates, e.g. understanding of policy, problem solving, critical and creative thinking, are identical in all regions. In some countries there is no cybersecurity education at all. By far most interviewed expressed that updating the curriculum is of the highest importance, scoring 5 out of 5. This skills gap amongst new entrants needs to be filled so that industry has the capacity to respond to existing and emerging cybersecurity risks and threats.

IS3C and NASK plan to establish a Cybersecurity Hub under the DC, as part of its intersessional work plan, which will bring together stakeholders from educational institutions,

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[1] Closing the gap, between the needs of the cybersecurity industry and the skills of tertiary education graduates (Janice Richardson et al, IS3C. 2022) https://is3coalition.org/docs/study-report-is3c-cybersecurity-skills-gap/

industry and the technical community, to exchange best practices and agree improvements to teaching and training curricula, in a more strategic approach to developing the capacity to respond to existing and emerging cyber risks and threats. This outcome will provide school-leavers and graduates with the necessary cybersecurity knowledge and skills required by the cyber industry.

The value of the IS3C-NASK proposal for the Cybersecurity Hub was recognised by Simon Besteman, director of the Netherlands trade association of Internet service providers ISPConnect, who said:

> *"It is of great importance for the Internet industry that the curriculum of tertiary cybersecurity educational facilities aligns in a better way with the quality the Internet and cybersecurity industries needs and demands. Action is called for to bring the two stakeholders, education and industry, together to close the current skills gap as soon as possible."*

Following the announcement of the concept of the Cybersecurity Hub at the IGF in Kyoto, IS3C and NASK have drafted a work programme for establishing the Cybersecurity Hub which includes securing the necessary funding for the project and research teams, overall coordination and promotional outreach.

Taking forward the Cybersecurity Hub as an IGF policy incubator programme

The core objective of the Cybersecurity Hub will be to resolve the shortfalls on the educational supply side for cybersecurity skills by promoting greater awareness amongst educationalists of industry's cybersecurity requirements and how these change with the rapid pace of technology evolution. In this way, this unique collaborative platform for industry and education will pave the way for a more strategic and harmonised global approach to capacity building in cybersecurity skills that will underpin efforts to close digital divides and contribute to sustainable development.

The establishment of the cybersecurity skills hub would therefore benefit from commitment and active support by the IGF community as a channel for implementing policy recommendations at the global level. The principal outcome of a practical blueprint for harmonising cybersecurity skills development requires the support and commitment of stakeholders in all regions. IS3C believes therefore that an IGF policy incubator pilot project would provide the means for providing the necessary stable and neutral environment for policy development.

IS3C and NASK also believe that the Cybersecurity Hub has the potential to serve as a global observatory that would identify emerging security challenges and enable the educational sector to define and teach the new skills and knowledge requirements that are needed to address them.

Action plan and timeline with milestones

The MAG is hereby requested to approve the IS3C-NASK Cybersecurity Hub as a two-year policy incubator pilot programme commencing in March/April 2024 and concluding in December 2025.

The pilot programme will present its initial report at the IGF in Riyadh covering the launch phase of the industry-education hub, including i) the outcomes of its research in cybersecurity skills best practices worldwide; ii) the policy recommendations of the IS3C-NASK expert group meetings; and iii) the workplan for finalising of the global skills curriculum blueprint in the second year of the pilot policy incubator programme.

The two year programme will conclude with the presentation of the curriculum blueprint at the IGF in 2025. IS3C and NASK will also make recommendations for its dissemination and adoption in cooperation with industry bodies and national and regional education administrations worldwide.

Following the conclusion of the pilot policy incubator programme in December 2025, it is suggested that a review of the programme be conducted in December 2025/January 2026 by the MAG and IGF Secretariat in cooperation with IS3C and NASK.

Summary of Projected Timeline

March - April 2024 - Launch of the IGF Pilot Policy Incubator on Cybersecurity Skills

April - November 2024 - Phase 1: IS3C-NASK research on harmonising educational and vocational training best practices. Creation of expert group(s), defining the work programme of 2025

December 2024 - Report to the IGF community in Riyadh of the policy incubator's research findings and policy recommendations for developing the global skills template at IGF in Riyadh

January - September 2025 - Development of the global cybersecurity skills template

November/December 2025 - Presentation of the global cybersecurity skills template at the IGF with policy recommendations for dissemination and adoption by key partners in industry and education and vocational training sectors

December 2025/January 2026 - Overall review of the cybersecurity skills policy incubator pilot programme.

IS3C and NASK believe that the launch of this policy incubator project in 2024 will be timely in the context of the launch this year of the Global Digital Compact and of the review of the IGF's mandate during the WSIS+20 review in 2025, because it will demonstrate how the IGF can respond to a critical global policy challenge with consensus-based multi-stakeholder cooperative solutions and a programme of action.

Wout de Natris   Maciej Gron

IS3C Coordinator   Attorney at law / expert in legal

                                                 regulations and scientific cooperation

                                                 NASK

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