

Addressing the Cyber Talent Skills Gap in EMEA

Scalable Programs to Build a Resilient Workforce and Strengthen Cybersecurity

5 Year Impact Report (2020-2025)

SANS

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Executive Summary

The Europe, the Middle East, and Africa (EMEA) region faces an escalating cybersecurity talent gap, with businesses and government agencies struggling to fill critical security roles amid an ever-growing threat landscape.

As cybercrime costs continue to rise and digital transformation accelerates, the demand for highly skilled cybersecurity professionals has never been greater.

To build a resilient cybersecurity ecosystem, two key challenges must be addressed: ensuring that **existing cybersecurity professionals continue to sharpen their skills** to keep pace with evolving threats, while also **maintaining a strong talent pipeline** to meet existing skills gaps and vacancies.

Without both elements in place, organisations risk being left vulnerable to increasingly sophisticated cyberattacks.

At SANS, we are committed to tackling these challenges by delivering industry-leading training programs that **reskill and upskill** individuals across the United Kingdom, Europe, the Middle East, and Africa.

Our mission is to empower aspiring and existing cybersecurity professionals with the practical skills, knowledge, and certifications needed to protect organisations from evolving cyber threats.

Over the past two years, our impact has been significant:

- **Thousands of individuals trained** through SANS Academies and specialised programs.
- **Strong job placement outcomes** on programmes with employability as a key focus, with recent cohorts achieving 79% and 77% employment within 12 months.
- **Robust partnerships** with corporate and government entities are accelerating workforce development across key EMEA regions.
- **Upskilling industry professionals**, helping organisations close skills gaps and future-proof their cybersecurity capabilities through targeted training initiatives.
- **Commitment to inclusion**, with targeted initiatives supporting women, military veterans, and career changers from underrepresented backgrounds.

With flagship programs such as **Upskill in Cyber (UK), Cyber Talent Academy (Germany), and the Defence Cyber Academy (Netherlands)**, we are expanding opportunities for individuals and organisations to strengthen the region's cyber resilience.

As we scale our efforts, we invite partners, employers, and stakeholders to collaborate with us in shaping a more secure digital future.

Together, we can bridge the cybersecurity skills gap and build a workforce equipped to meet the challenges of tomorrow.





Rising Cybercrime & Emerging Challenges in EMEA

Cybercrime costs are soaring across EMEA, driven by the increasing frequency and sophistication of AI-powered attacks, ransomware, and geopolitically motivated threats. In **Africa, the rapid acceleration of digital transformation has expanded the threat landscape**, while **European organisations are contending with intensifying compliance demands** under evolving regulatory regimes. Meanwhile, **the Middle East continues to face heightened exposure to nation-state attacks** and vulnerabilities within critical infrastructure sectors.

Compounding this complexity is the introduction of new regulatory frameworks that require organisations to realign their cybersecurity and data protection strategies. Notably, **nearly 50% of European organisations report that emerging regulations such as NIS II, DORA, and CMMC are already shaping hiring and compliance practices**, despite being relatively recent.

Frameworks such as the **European Cybersecurity Skills Framework (ECSF)** and **SCyWF Framework (Saudi Arabia)** provide structured definitions of cybersecurity roles, competencies, and training requirements, equipping employers to better assess capabilities and establish clear development pathways. Encouragingly, **53% of organisations globally now use these or similar frameworks to inform job requirements**.

As regulatory landscapes continue to evolve, organisations must not only remain compliant but also make strategic investments in specialist talent to mitigate risk and proactively defend against an increasingly sophisticated threat environment.

Addressing the Cybersecurity Skills Gap

Efforts to grow the cybersecurity talent pipeline are beginning to yield results, with more professionals entering the sector. However, as threats evolve in complexity, the emphasis is **shifting from entry-level recruitment to the upskilling of existing professionals**, particularly those in mid-career or specialist roles.

According to the SANS 2025 Workforce Report, **52% of organisations cite “not having the right staff”** as their main workforce concern, compared with **48% who reference headcount shortages**. This marks a strategic shift: organisational **resilience now hinges on capability, not just capacity**.

To address this gap:

- **55% of organisations have implemented formalised training program** for cybersecurity staff.
- The most effective learning strategies combine **on-the-job training, role-specific functional training, and certification pathways**, all highly rated by cybersecurity and HR leaders alike.
- **51% of organisations now prioritise upskilling internal talent** over external hiring as a means to meet capability demands.

Nonetheless, significant capability gaps persist in key technical areas. Roles such as Cyber Defence Analyst, Incident Responder, and Penetration Tester require an average of four to six years of experience and can take over 72 days to fill, despite often being perceived as junior-level roles.

Furthermore, **65% of organisations require formal certifications for regulatory compliance and client assurance**, while **58% use certifications to guide internal hiring and promotion decisions**, underscoring the increasing importance of validated expertise.

Closing the cybersecurity skills gap will require more than just expanding the workforce. It will demand sustained **investment in structured, role-aligned development opportunities** that evolve in step with the threats these professionals are tasked to mitigate.



Bridging The Cybersecurity Skills Gap in EMEA

SANS is committed to strengthening EMEA's cybersecurity workforce by delivering world-class training and GIAC certifications. Our scalable programs help organisations meet regulatory demands, enhance cyber resilience, and build skilled talent for the digital future.

Tailored, Impact-Driven Training

Our accelerated Cyber Programs (8, 10, or 12 weeks) condense years of study, equipping learners with the skills needed for real-world cyber roles. Programs can include industry introductions and soft skills development to create well-rounded professionals.

We provide targeted training for:

- New to Cyber
- Military & Public Sector
- Private Sector
- Philanthropic Initiatives

Designed to close critical skills gaps, our programs boost employability, support workforce diversity, and drive labour market growth.



A Structured Approach to Workforce Development

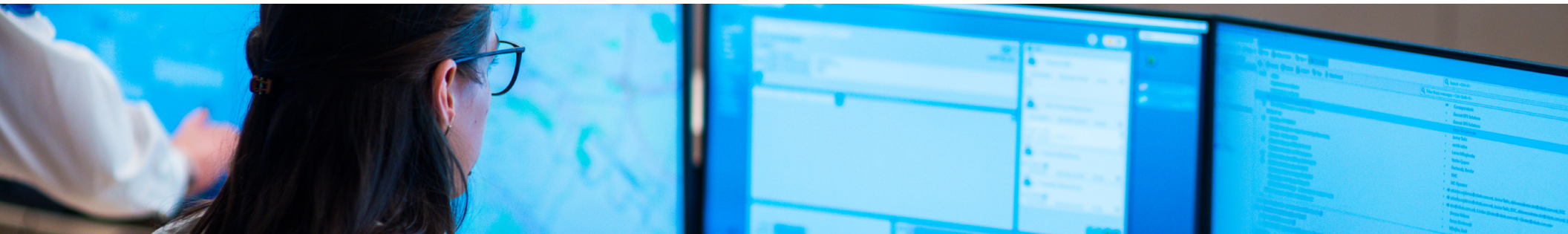
SANS follows an eight-stage model to ensure programs align with organisational and industry needs:

- 1. CONSULT** - Defined objectives and requirements to design a tailored program.
- 2. SOURCE** - We run targeted campaigns to attract top candidates from diverse backgrounds.
- 3. ASSESS** - Aptitude assessments identify domain-specific skills and optimal learning pathways.
- 4. SELECT** - We provide data-driven recommendations to match candidates with the right program tracks.
- 5. TRAIN** - Learners receive expert-led instruction from SANS' extensive catalogue of 85+ courses, with hands-on labs, mentoring, and CTF challenges to reinforce skills.
- 6. CERTIFY** - Dedicated support prepares learners for GIAC certifications, validating their expertise and increasing employability prospects.
- 7. DEPLOY** - We help candidates transition into cyber roles with career coaching, CV workshops, and job placement support.
- 8. EVALUATE** - SANS continuously monitors and evaluates for future delivery refinement.

With a proven track record of delivering cybersecurity excellence, SANS is driving the future of cyber talent in EMEA.



SANS Programs Impact & Demographics - Adult Pathways



1000+ Students
Trained Through SANS Programs
2022 - 2024



1693 GIAC Certifications
Received Through SANS Programs
2022 - 2024



301 Cyber Interviews Earned
Through SANS Programs and
Employability Support, 2022 - 2024



223 Jobs Secured
Through SANS Programs and
Employability Support, 2022 - 2024

Programs by Region



Bahrain



Denmark



Germany



Kuwait



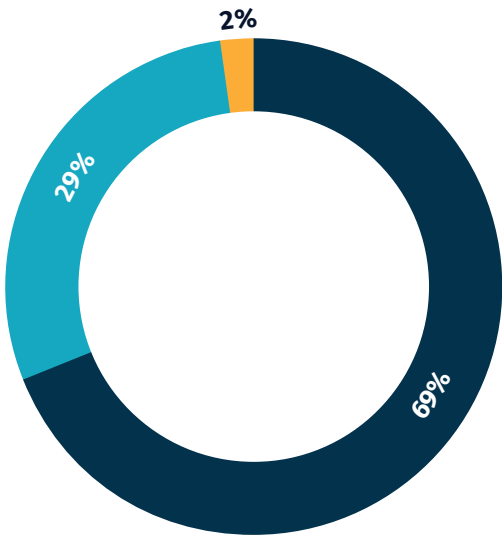
The Netherlands



Switzerland



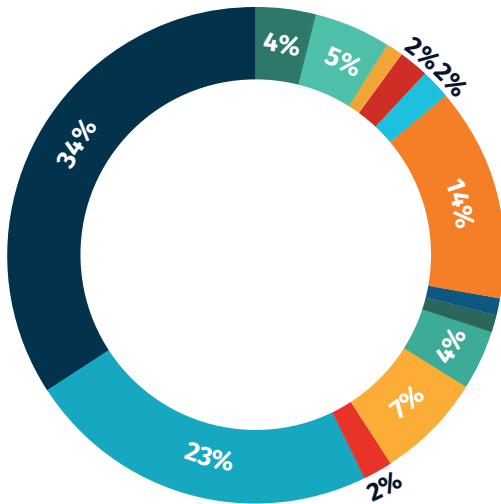
UK



Learners by Gender

- Male
- Female
- Other

As of 2025, **women represent just 20–25% of the cybersecurity workforce in Europe**, with the UK at 17.9%—below the global average of 25% reported in 2022 by [ISC2's Research: Women in Cyber](#).



Learners by Ethnicity

- Caucasian
- Caribbean
- Pakistani
- Asian
- African
- Chinese
- Arab
- Bangladeshi
- Indian
- Any other African, or Caribbean background
- Any other Caucasian background
- Any other ethnic group
- Any other Mixed or Multiple ethnic background

SANS Programs Impact & Demographics - Youth Pathways (13-18yo)



133,000+ Students

Registered to the program over 4 years, Cyber Discovery 2017-2021



Elite training led to 213 GIAC-certified

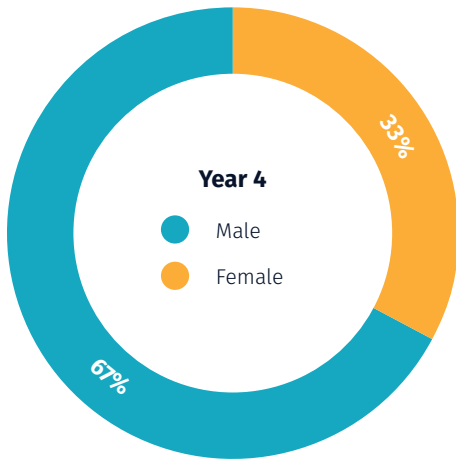
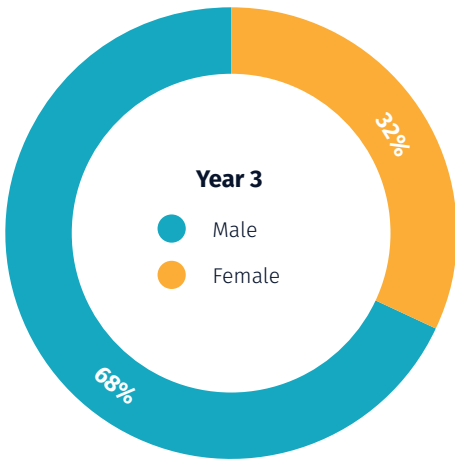
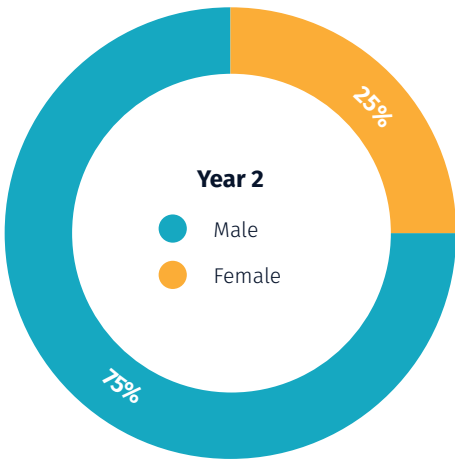
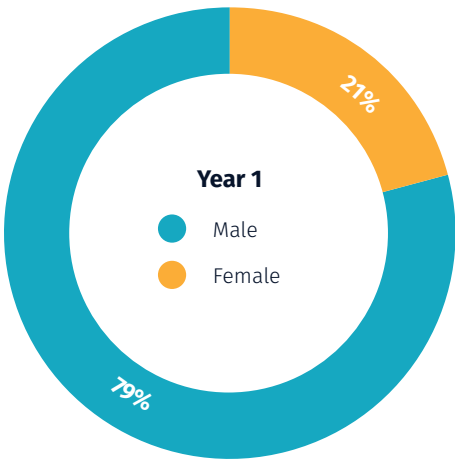
students in just two years—achieving 93% and 89% pass rates. Cyber Discovery 2018-2019



94% of Students

Rated the program as 'Good' or 'Very Good', Cyber Discovery 2017-2021

Learners by Gender



SANS Programs Overview

Workforce Development Programs



UK Cyber Team Competition:

Provided 18-25-year-olds with a pathway into elite cybersecurity by competing to become a part of the UK Cyber Team.



Upskill in Cyber:

Tackled the UK's growing demand for cyber professionals by training the next generation for junior cyber roles.



Kuwait Cybersecurity Leaders Program:

Created to train, certify, and upskill professionals in Kuwait's financial sector.



Bahrain Cyber Reskilling Academy:

Developed to certify Bahraini nationals with two GIAC certifications, helping them transition into cybersecurity roles locally and internationally.

Philanthropic Programs



Allianz Cyber Talent Academy:

Aimed to bridge the cybersecurity skills gap by providing accelerated, high-quality training and GIAC certifications, effectively launching careers in cybersecurity.



Women in Cyber - SANS Talent Academy:

Empowered women in cybersecurity through world-class SANS training, in partnership with Women in Cyber Switzerland.



Redi School Cybersecurity Training Camps:

Were designed to support women and non-binary people from refugee and migrant backgrounds to develop a career in cyber.

Military Programs



British Army Cyber Academy:

Designed to develop and enhance cyber capabilities within the Army, equipping personnel with cutting-edge skills to defend against digital threats.



Netherlands Defence Cyber Academy:

Supported the Dutch Ministry of Defence in enhancing its digital capabilities.

Youth Engagement Programs



Cyber Discovery:

Introduced 13-18-year-olds to cybersecurity through gamified learning, inspiring future careers in the cyber workforce.

297

Certifications Passed with an Average Score of 85%

Netherlands Defence Cyber Academy, 2022-2024

73%

are now Employed in a Cyber Role

Upskill in Cyber Program, 2023

96%

of Students Achieved Two GIAC Certifications

Kuwait Cyber Security Leaders Program 2024

SANS Program Mission Partners & Sponsors



UK Government



تمكين
Tamkeen



metafinanz
technologie. kultur. netzwerke.



Allianz



Ministerie van Defensie

INDUSTRIENS
FOND
FREMME DANSK
KONKURRENCEEVNE
The Danish Industry Foundation



Bridewell



BAE SYSTEMS

SIEMENS

Why the Best Cybersecurity Training Comes from Practitioners

Cyber threats evolve at an unprecedented pace, and staying ahead requires more than just theory. While academia provides strong foundations, only active practitioners can share the latest real-world tactics. That's why SANS instructors are frontline experts—bringing cutting-edge skills directly from the field to the classroom.





Spotlight: UK Cyber Team Competition

About the Program:

The UK Cyber Team Competition was a nationwide initiative to **identify, develop, and showcase top cybersecurity talent**. Through rigorous **challenges, mentorship, and team-based competitions**, participants sharpened their technical and strategic skills while gaining industry exposure.

The program provided a platform for aspiring professionals to **connect with experts, compete on global stages, and strengthen the UK's future cybersecurity workforce**.

Results:



1310 program applications received



Over **45 industry supporters** secured



65 finalists have reached out to the program partners, Inpire, for feedback on their **soft-skills assessment**



Over **£250,000 equivalent of in-kind services** have been secured from industry sponsors



Alumni: Emily Bridge

With a passion for cybersecurity and a desire to represent the UK internationally, Emily saw it as the perfect chance to challenge herself and access exclusive training through SANS and industry sponsors.

Round 1 was intense but rewarding. With only 24 hours to complete the challenge, Emily had to manage her time carefully. The broad range of topics—from OSINT to reverse engineering—pushed her outside her comfort zone and helped her identify areas to improve. The Ranges.io platform, she noted, was intuitive and easy to use.

By Round 2, she felt more confident. Without a live leaderboard, there was less pressure, and she performed better by understanding the platform and flag formats. The round also helped her recognise her strengths and how she could contribute to a team. Making it to the Live Final was a proud moment. “Receiving the email was such a boost—it reminded me that hard work really pays off.” She loved the immersive environment and the energy in the room, and quickly bonded with her team despite only meeting the night before.

“Honestly, the Live Finals has been the best part of my cyber career so far. I loved how everyone was each other's cheerleader, and the buzz in the room made the competition feel real.”

Emily also appreciated the wellbeing focus of the event and took full advantage of the career development opportunities, including one-to-one sessions with SANS. She particularly enjoyed the induction night scavenger hunt, which helped build team dynamics. For Emily, the competition was more than a test of skill—it was an opportunity to grow, connect, and take the next step in her cybersecurity journey.



UK Government



Industry Comments



"We are thoroughly enjoying every element of this program, and we remain keen to continue adding as much value as we possibly can. On behalf of all of us at Inzpire, I also want to pass on our sincerest thanks to you and everyone involved from SANS. All our dealings with SANS have been excellent, and we feel very proud to be involved in this prestigious and superbly delivered enterprise."



"Thank you for the introduction to the UK Cyber Team Competition. What a fantastic competition to showcase the quality of the young cyber talent we have in the UK. We are proud to support and have engaged with some fantastic young minds."



"We are buzzing from this CTF competition! This highlights the formidable talent of 18-25-year-olds right here in the UK, ready to tackle the real-world challenges in cybersecurity. On a personal note, I delivered my biggest speaking gig to over 250+ in-person attendees. Absolutely fabulous event, well done SANS!"



"What a weekend! The Cyber House Party team had an incredible time at the UK Cyber Competition, and we want to say a huge thank you to everyone who made this event so special. Thank you to the organisers SANS EMEA and the Department for Science, Innovation and Technology for having us; it is always a privilege to be part of such an inspiring event. To all the participants, organisers, and supporters, this weekend was a celebration of talent, teamwork, and community. We are honoured to have been part of it and cannot wait to see what is next for the incredible young people who took part."



"Amazing, outstanding. Thank you for the opportunity for us to be involved. We are working with the senior leadership team to discuss long-term sponsorship and support."



Spotlight: Bahrain Cyber Reskilling Academy

About the Program:

In partnership between SANS Institute and Tamkeen, the Cyber Reskilling Academy was a pioneering initiative to fast-track cybersecurity talent in Bahrain. From 2022 to 2024, the intensive **eight-week program trained 91 participants**, equipping them with GIAC certifications and hands-on skills to transition into cyber careers. **Designed for jobseekers, career changers, and professionals**, the academy engaged government agencies, private sector leaders, and MSSPs, **creating a strong pipeline of security talent**.

Results:



85% of participants achieved **two GIAC certifications**



87% average certification score



100% of Students Interviewed for a Cyber Role



77% secured cybersecurity employment within 6 months of course completion



Alumni: Mohammad Tazeem Naz

Mohammad started his journey in cyber security with a BSc in Mathematics and Computer Science, graduating in 2016. He then went on to take his MSc in Cyber Security at the University of Bahrain.

On joining the SANS Institute Cyber Reskilling program, Mohammed was at the same time in full-time employment working as an InfoSec Analyst.

Studying alongside his job, he completed three GIAC certifications, including GCIH Incident Handler, GSEC Security Essentials and GFACT Foundational Cybersecurity Technologies. On top of this, his exceptionally high scores during his examinations earned him a place on the GIAC Advisory Board.

Mohammad was delighted to be part of the program and went on to say *'I appreciate the opportunity to participate in the Cyber Reskilling Program, and thank the team at SANS for their support, time, and efforts. The SANS courses provided me with practical skills and deep insights into various cybersecurity domains. The hands-on labs, expert instructors, and real-world scenarios helped me build confidence in tackling security challenges. I'm grateful for the opportunity to learn and grow within such a supportive community.'*

He was also able to support the third cohort of students of the Cyber Reskilling Program by attending the latest Career Fair and discussing his journey into the sector.



Spotlight: Cyber Security Training Camps

About the Training Camps:

In partnership with SANS Institute and ReDI School of Digital Integration, the **Cybersecurity Training Camps provided intensive training for women from migrant and underrepresented backgrounds**, equipping them with the skills and certifications needed to enter the cybersecurity industry.

The program combined **hands-on learning, expert mentorship, and career support, creating pathways for diverse talent to thrive in cyber.**

Results:



97% overall course completion rate.



100% completion rate for the Foundational Track



90% completion rate for the Technical Track



Alumni: Tifana Rosa Taftazani

Tifana began her journey into cybersecurity through the SANS x ReDI School Cybersecurity Training Camps—an intensive, 10-week program designed to upskill individuals with little or no prior technical background.

Coming from a non-technical field, Tifana joined the Foundational Track, enrolling in the SEC275: Foundations course. Over the course of the program, she built a strong foundation in IT and cybersecurity concepts, culminating in her successful completion of the GIAC Foundational Cybersecurity Technologies (GFACT) certification exam.

Reflecting on her experience, Tifana wrote, *“I was really worried at first, since I had no prior experience in cybersecurity or IT. But the course was extremely well-structured and accessible. The videos were easy to understand, and the labs were hands-on and fun.”*

To prepare for the GFACT exam, Tifana dedicated herself to building a detailed index, revisiting lab exercises, and taking both practice exams. *“I took both practice tests seriously and used the feedback to fine-tune my study strategy,”* she shared. Despite juggling personal responsibilities, she made time to study consistently, often using flashcards, summaries, and handwritten notes to reinforce her learning.

On passing the certification, she wrote: *“I genuinely didn’t expect to enjoy the process this much. It was intense, yes—but achievable. And passing the exam gave me a huge confidence boost. It proved to me that I could really do this.”*

Contact us

Whether you're looking to support the community or develop internal talent, we're here to help. From foundational skills to hands-on training, we design tailored programmes that empower the next generation—spanning all technical capabilities and focused on those new to cyber.

Get in touch and let's build the future, together.

Get Involved Today:



cyberacademy@sans.org



sans.org/mlp/cybersecurity-training-programmes