



CYBER SKILLS ASSESSMENT

A COMPANION FOR YOUR
CYBERSECURITY CAREER



ASSESS YOUR SKILLS
NOW

- **Analyse** your current cybersecurity activities.
- **Identify** your own skills requiring upgrade.
- **Improve** skills as requested for current job.
- **Develop** continuous reskilling program.
- **Grow** career based on gained competences.
- **Define** a job transition pathway.



Security Forum

24 octobre 2019

Cyber skills Assessment

What skills do you miss in your current and future jobs?

Prof. Georges Ataya



High demand
for
Cybersecurity
professionals

% OF LABOUR DEMAND THAT WILL REMAIN UNFILLED IN 2030: TOP 3 SECTORS



18%

Healthcare



18%

ICT



13%

Education



4.5 million

WORKING PEOPLE NEED
TO UPSKILL



584,000

UNFILLED VACANCIES
IN BELGIUM IN 2030



310,000

WORKERS AND UNEMPLOYED
PEOPLE IN RETRAINING



**95 billion euros
of GDP**

AT STAKE IN 2030 ALONE

Cumulative impact



We do
not have
enough
people

They do
not have
the right
skills

They do
not get
the right
training

Training and education for an optimal preservation of Skills





Cybersecurity
Information
Security
Risk
Compliance

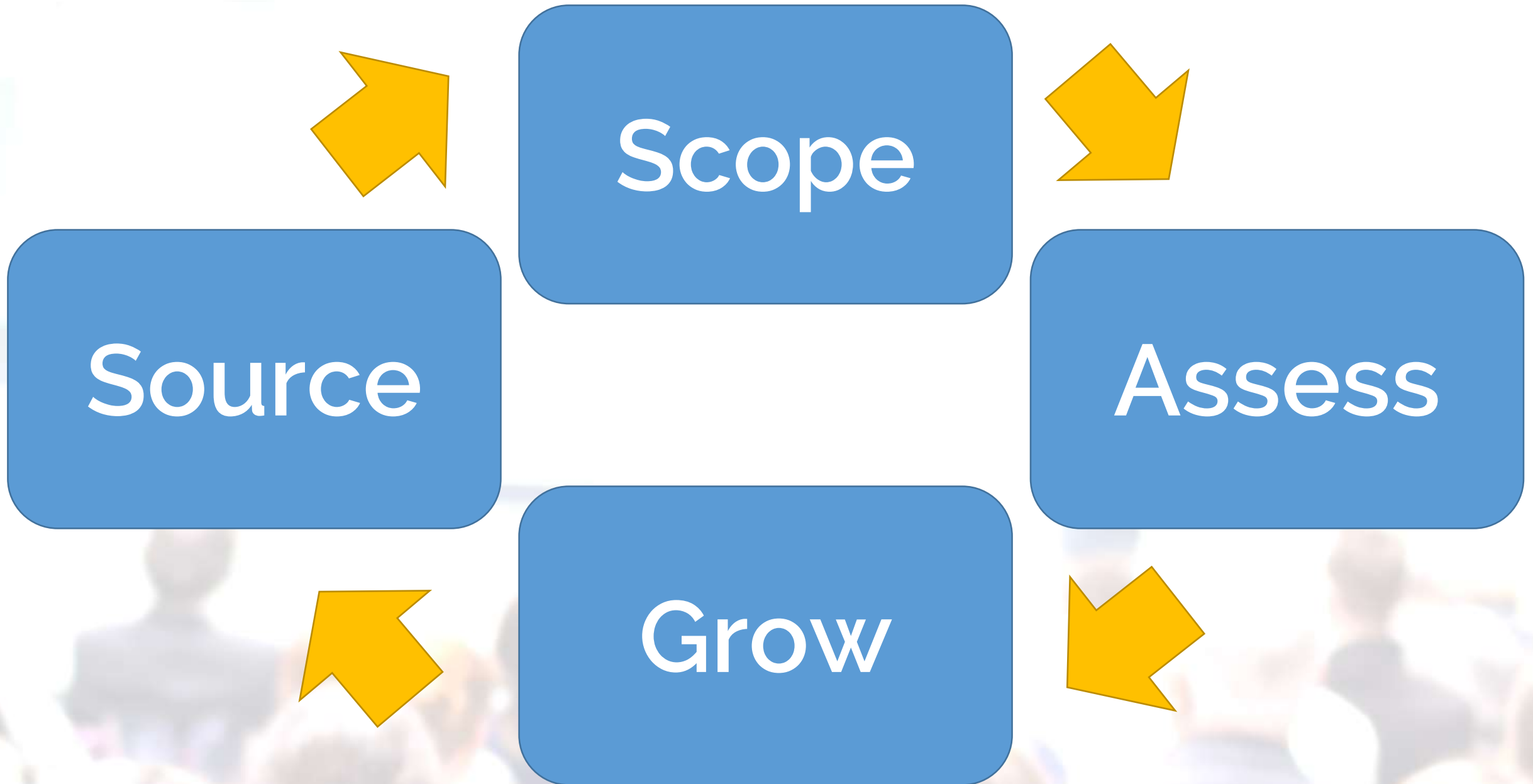
Multiple
sources for
skills
upgrade



The cybersecurity
workforce gap to reach
up to 350,000 positions
in Europe by 2022

sources for skills upgrade





VARIOUS FRAMEWORKS, BODIES OF KNOWLEDGE AND STANDARDS



TOGAF™ 9



ISO 27001



SECURE APPLICATION DEVELOPMENT

Brussels then Leuven



Co-founded, with Johan Peeters, the World-exclusive Secure Application Development week running since 2005. Speaks on Application security. International keynote speakers.



Kim Wuyts



Barry Dorrans

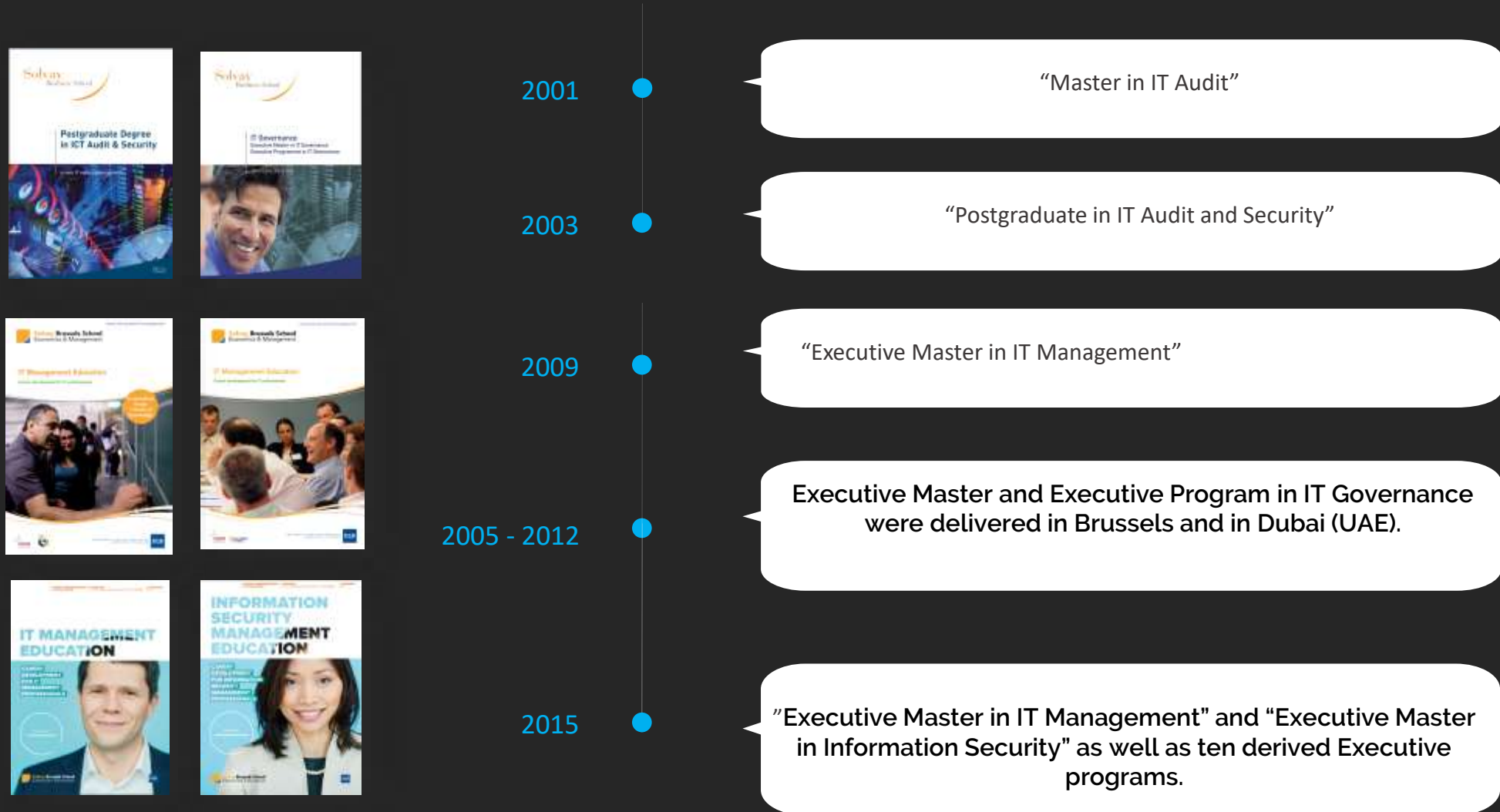


Dominick Baier

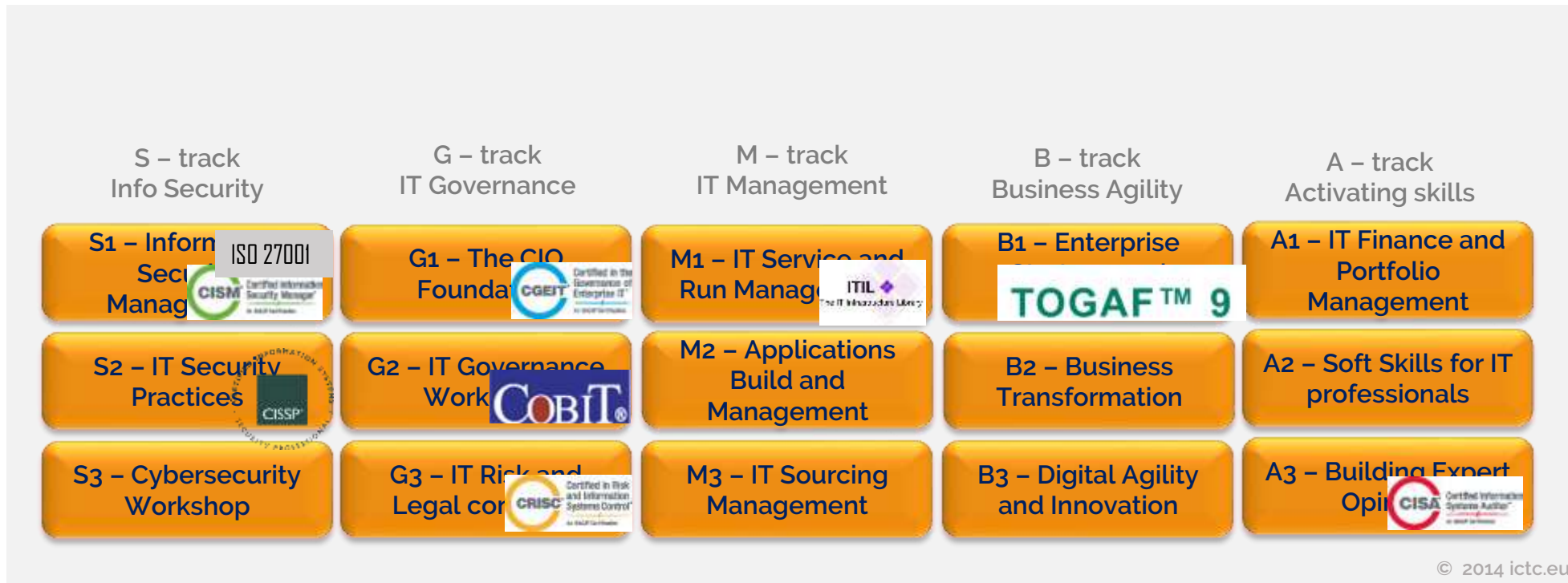


Jim Manico

Four major transformation were overall conducted:



Information security management education



Skills requirements for Cyber Security domains

Technical	Generic	Management
<ol style="list-style-type: none">1. Malicious Code and Activity2. Networks and Communications3. PKI and Cryptography4. Forensics and Investigation5. Evolving technology: Clouds, IOT, Big Data6. Web security7. Payment systems Security8. Mobile and wireless Security9. Physical Environmental	<ol style="list-style-type: none">1. Information Security Architecture2. Privacy3. Access Control (IAM)4. Standards, Policies5. Detection, Monitoring and Analysis (IDP)6. Legal, compliance and regulatory7. Incident and Crisis Response8. Recovery activities9. Business process controls10. Data Loss Management	<ol style="list-style-type: none">1. Organization, planning and frameworks2. Risk analysis and mitigation3. Security Operations and Administration4. Awareness campaigns and communication5. Disaster planning and Recovery6. Skills, sourcing and third party



1 Legal and Management Requirements

Define Data Protection objectives and scope.

[> Learn more](#)

2 Risk and Impact Assessment

Identify the gap in reaching defined protection targets.

[> Learn more](#)

3 Compliance Transformation

Manage compliance related transformation.

[> Learn more](#)

4 Information Security and Privacy

Protect and secure architectural components.

[> Learn more](#)

5 Response and Breach Management

Prepare, react and notify when needed.

[> Learn more](#)



European e-Competence Framework 3.0

A common European framework for ICT Professionals in all industry sectors

Dimension 1	Dimension 2	Dimension 3				
5 e-competence areas (A - E)	40 e-competences Identified	e-competence proficiency levels e-1 to e-5 (related to EQF levels 3-8)				
		e-CF levels Identified for each competence				
		e-1	e-2	e-3	e-4	e-5
A. PLAN	A.1. IS and Business Strategy Alignment					
	A.2. Service Level Management					
	A.3. Business Plan Development					
	A.4. Product/ Service Planning					
	A.5. Architecture Design					
	A.6. Application Design					
	A.7. Technology Trend Monitoring					
	A.8. Sustainable Development					
	A.9. Innovating					
B. BUILD	B.1. Application Development					
	B.2. Component Integration					
	B.3. Testing					
	B.4. Solution Deployment					
	B.5. Documentation Production					
	B.6. Systems Engineering					
C. RUN	C.1. User Support					
	C.2. Change Support					
	C.3. Service Delivery					
	C.4. Problem Management					
D. ENABLE	D.1. Information Security Strategy Development					
	D.2. ICT Quality Strategy Development					
	D.3. Education and Training Provision					
	D.4. Purchasing					
	D.5. Sales Proposal Development					
	D.6. Channel Management					
	D.7. Sales Management					
	D.8. Contract Management					
	D.9. Personnel Development					
	D.10. Information and Knowledge Management					
	D.11. Needs Identification					
	D.12. Digital Marketing					
E. MANAGE	E.1. Forecast Development					
	E.2. Project and Portfolio Management					
	E.3. Risk Management					
	E.4. Relationship Management					
	E.5. Process Improvement					
	E.6. ICT Quality Management					
	E.7. Business Change Management					
	E.8. Information Security Management					
	E.9. IS Governance					

NIST Special Publication 800-181

National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework

William Newhouse
Stephanie Keith
Benjamin Scribner
Greg Witte

This publication is available free of charge from:
<https://doi.org/10.6028/NIST.SP.800-181>

NIST
National Institute of
Standards and Technology
U.S. Department of Commerce

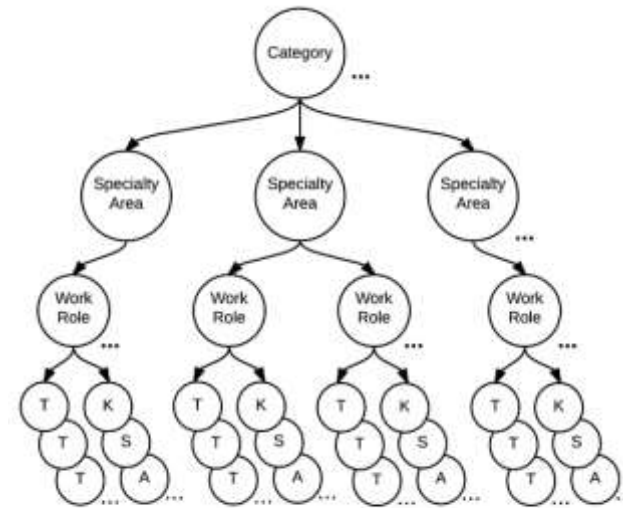
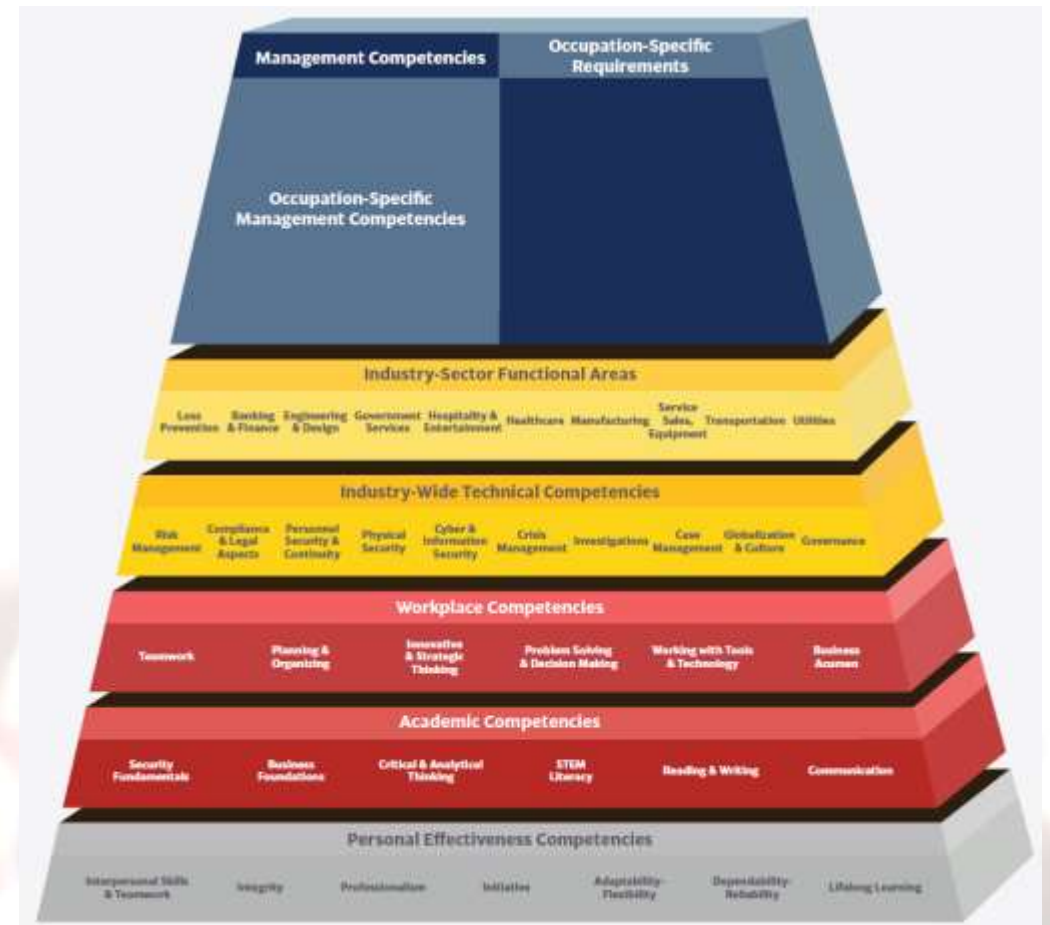


Figure 1 - Relationships among NICE Framework Components



| Cybersecurity Competency Model

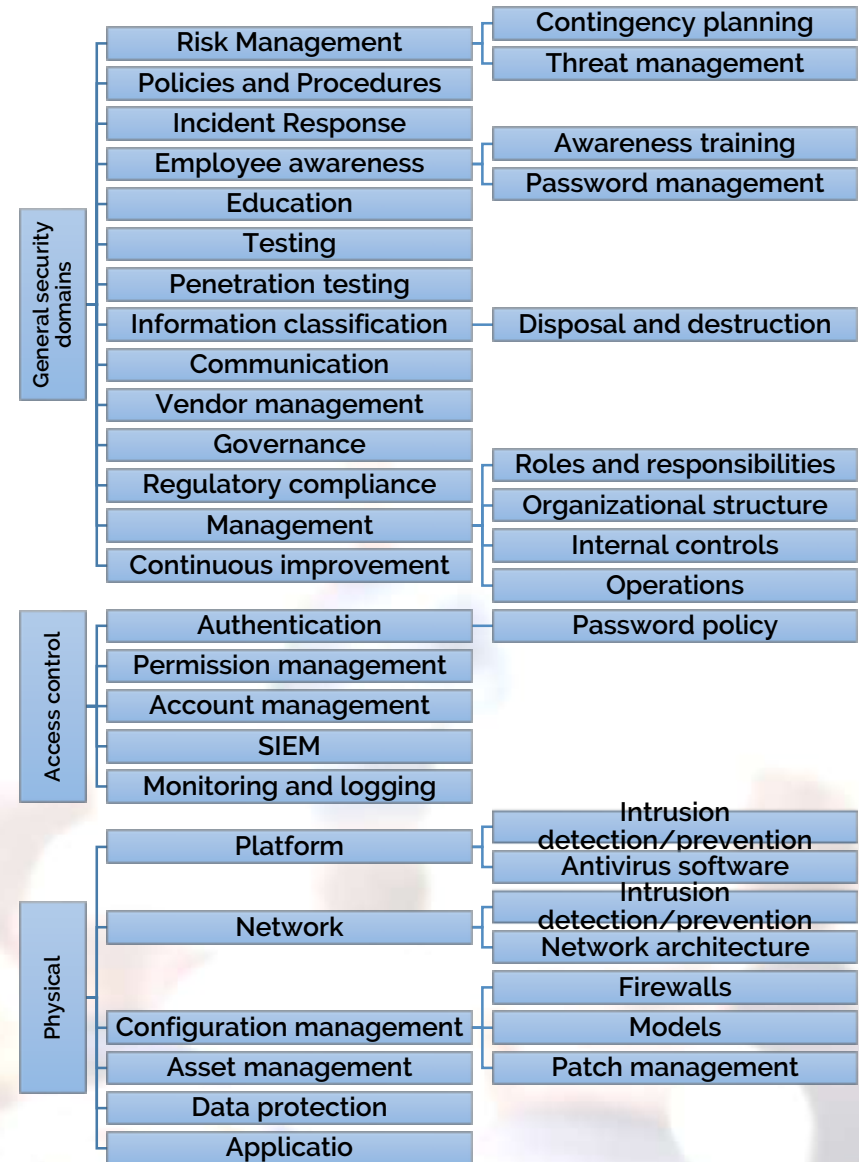
- **Occupation-Related Competencies**
 - Tier 9 – Management Competencies
 - Tier 8 – Occupation-Specific Requirements
 - Tier 7 – Occupation-Specific Technical Competencies
 - Tier 6 – Occupation-Specific Knowledge Competencies
- **Industry-Related Competencies**
 - Tier 5 – Industry-Sector Technical Competencies
 - Tier 4 – Industry-Wide Technical Competencies
- **Foundational Competencies**
 - Tier 3 – Workplace Competencies
 - Tier 2 – Academic Competencies
 - Tier 1 – Personal Effectiveness



| Industry-wide technical competences

Network Security and Platform Security	Database and Application Security	Service Layer Security	Incident and Security Management	Forensics and Legal
Network vulnerability detection	Secure coding	Server security	Security Standards	Security of network and information systems law (NIS)
Authentication	Data validation	Cryptography	Incident handling	Cybercrime law
Packet Analysis	Webserver & application vulnerability detection	Intrusion alerts	Security Risk	Digital identification & storage law
IDS rule management	Database security	Physical security	IT security governance	Privacy & Data protection law
Penetration testing	Data classification	Security service level agreements	Crisis Communication	Threat Intelligence
Network Security	Secure data conversion		Disaster recovery	Network Forensics
IDS placement	Encryption		Business continuity plan	System Forensic
System vulnerability detection			IT service Management practices	Artifact handling and analysis
Malware analysis			Security awareness plan	Data forensics
IDS/SCADA security			Incident management plan	Mobile phone forensics
Log analyse			Identity Management &	

IT security domains

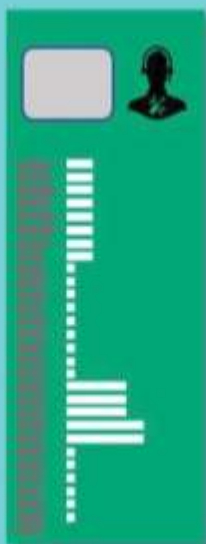


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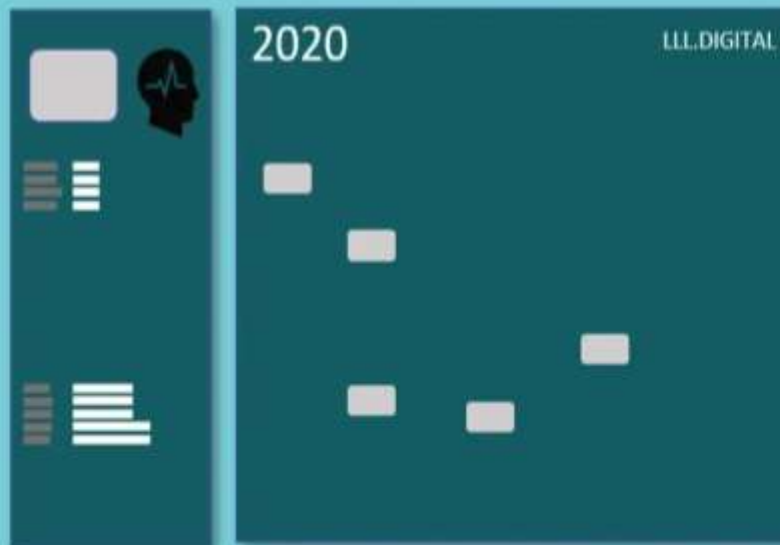
Life-Long Learning Concept



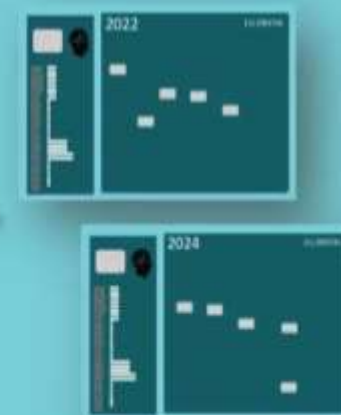
Assess your
competences



Compare to
your career
target and
current activity
needs



Develop your
life-long
learning plan



Periodically
Review and
update your
plan

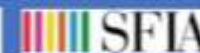
Life-Long Learning Concept



Assess your
competences



Digital Competences



Managerial Competences



Soft skills





Develop your
life-long
learning plan



Academic Education

MODULE QUARTER 1, JAN 4 2020	MODULE QUARTER 2, APR 6 2020	MODULE QUARTER 3, JUL 8 2020
Introduction to Cyber Security This module introduces the field of cyber security, covering the basics of computer systems, networks, and the threats they face. It also covers the legal and ethical aspects of cyber security.	IT Security Fundamentals This module covers the fundamentals of IT security, including the concepts of confidentiality, integrity, and availability. It also covers the basics of cryptography and network security.	Advanced Cyber Security This module covers advanced topics in cyber security, including the concepts of threat intelligence, incident response, and digital forensics. It also covers the basics of malware analysis and penetration testing.
IT Management Education This module covers the basics of IT management, including the concepts of IT strategy, IT governance, and IT service management. It also covers the basics of IT risk management and IT compliance.	Information Security Management Education This module covers the basics of information security management, including the concepts of information security policy, information security risk management, and information security incident response.	

Professional Certification



Conferences

BELGIAN
CYBER
SECURITY
CONVENTION



DIGITAL
TRANSFORMATION
CONFERENCE

INTERNET
OF THINGS
CONVENTION
SMART CITIES
2018

infosecurity
BELGIUM

Self study



Professional associations



**A COMPANION FOR YOUR
CYBERSECURITY CAREER**



BETA VERSION

**ASSESS YOUR SKILLS
NOW**

Please select one or a few competences that represent your domains of activities.
As a result, specific work roles shall be displayed.

<p>Securely Provision</p>	<p>Operate and Maintain</p>	<p>Oversee and Govern</p>	<p>Protect and Defend</p>	<p>Analyze</p>	<p>Collect and Operate</p>
<ul style="list-style-type: none"> <input type="checkbox"/> Secure Acquisition <input type="checkbox"/> Information Assurance Compliance <input type="checkbox"/> Secure Software Engineering <input type="checkbox"/> Systems Security Architecture <input type="checkbox"/> Technology Research and Development <input type="checkbox"/> Systems Requirements Planning <input type="checkbox"/> Test and Evaluation <input type="checkbox"/> Systems Development 	<ul style="list-style-type: none"> <input type="checkbox"/> Data Administration <input type="checkbox"/> Knowledge Management <input type="checkbox"/> Customer Service and Technical Support <input type="checkbox"/> Network Services <input type="checkbox"/> Systems Administration <input type="checkbox"/> Systems Security Analysis 	<ul style="list-style-type: none"> <input type="checkbox"/> Legal Advice and Advocacy <input type="checkbox"/> Training, Education, and Awareness (TEA) <input type="checkbox"/> Information Systems Security Operations <input type="checkbox"/> Strategic Planning and Policy Development <input type="checkbox"/> Information Systems Security Operations <input type="checkbox"/> Security Program Management 	<ul style="list-style-type: none"> <input type="checkbox"/> Enterprise Network Defense (END) Analysis <input type="checkbox"/> Enterprise Network Defense (END) Infrastructure Support <input type="checkbox"/> Incident Response <input type="checkbox"/> Vulnerability Assessment and Management 	<ul style="list-style-type: none"> <input type="checkbox"/> Threat Analysis <input type="checkbox"/> Exploitation Analysis <input type="checkbox"/> All Source Intelligence <input type="checkbox"/> Targets <input type="checkbox"/> Language Analysis 	<ul style="list-style-type: none"> <input type="checkbox"/> Collection Operations <input type="checkbox"/> Cyber Operational Planning <input type="checkbox"/> Cyber Operations <p>Investigate</p> <ul style="list-style-type: none"> <input type="checkbox"/> Cyber Investigation <input type="checkbox"/> Digital Forensics

Please select one or a few competences that represent your domains of activities.
As a result, specific work roles shall be displayed.

Management Competences

Leadership

Project Management

Strategic Planning

Teaching Others

Operational

Workforce
Management

External Awareness

Process Control

Conflict Management

Business Continuity

Legal, Government,
and Jurisprudence

Risk Management

Critical Thinking

Contracting /
Procurement

Organizational
Awareness

Third Party
Oversight/Acquisition
Management

Interpersonal Skills

Data Privacy and
Protection

Policy Management

Presenting Effectively

Technical Competences

Application & Systems

Computer Languages

System
Administration

Requirements
Analysis

Systems Integration

Software
Development

Systems Testing and
Evaluation

Software Testing and
Evaluation

Web Technology

Data & Information

Asset /Inventory
Management

Database
Management Systems

Collection Operations

Information
Management

Computer Forensics

Intelligence Analysis

Data Analysis

Knowledge
Management

Data Management

Threat Analysis

Database
Administration

Vulnerabilities
Assessment

Infrastructure & Operation

Information Systems
and Network Security

Operating Systems

Infrastructure Design

Operations and
technical Support

Network Defense

Target Development

Network
Management

Technology
Awareness

Telecommunications

Process & Activities

Computers and
Electronics

Information
Assurance

Encryption

Information
Technology
Assessment

Enterprise
Architecture

Mathematical
Reasoning

Identity Management

Modeling and
Simulation

Incident
Management

- ☐ Computer Network Defense (CND) Forensic Analyst
- ☐ Computer Forensic Analyst
- ☐ Digital Forensic Examiner
- ☐ Digital Media Collector
- ☐ Forensic Analyst
- ☐ Forensic Analyst (Cryptologic)
- ☒ Forensic Technician
- ☐ Network Forensic Examiner

**Those Job Functions should be related to your current activity, otherwise go up and reselect other specialties.
To proceed, select one Job Function and click NEXT to start the assessment.**

NEXT

Assessment Completion

Number of Tasks found: 39
Expected Completion Time: 19.5 min.

10.2%

Assessment Progress Indicator

SUSPEND

Short on time? Suspend and continue later

Do not leave without getting the token or sharing your email to restart from where you left.

Grading Levels:

L-1 : No competences in the domain

L-2 : Limited competences able to participate in related activities

L-3 : Advanced skills, capable of managing complex projects in this domain

L-4 : Subject matter expert on a national level

L-5 : Capable of speaking, lecturing on that topic

Body of knowledge is based on the publication both NIST SP 800-15 REV.2 and on research activity since 2017 by Solvay Brussels School iCite Research Centre and by Ataya and Partners experts. (compilation and presentation copyright 2019 to Ataya & Partners)

Job Function Selected : Forensic Technician

NIST Work Role : Cyber Defense Forensics Analyst

Competences to accomplish task:

1 - Conduct analysis of log files, evidence, and other information to determine best methods for identifying the perpetrator(s) of a network intrusion.

☐ L-1 ☐ L-2 ☐ L-3 ☒ L-4 ☐ L-5

2 - Confirm what is known about an intrusion and discover new information, if possible, after identifying intrusion via dynamic analysis.

☐ L-1 ☐ L-2 ☐ L-3 ☒ L-4 ☐ L-5

3 - Create a forensically sound duplicate of the evidence (i.e., forensic image) that ensures the original evidence is not unintentionally modified, to use for data recovery and analysis processes. This includes, but is not limited to, hard drives, floppy diskettes, CDs, PDAs, mobile phones, GPS, and all tape formats.

☐ L-1 ☐ L-2 ☒ L-3 ☐ L-4 ☐ L-5

4 - Decrypt seized data using technical means.

☐ L-1 ☒ L-2 ☐ L-3 ☐ L-4 ☐ L-5

5 - Provide technical summary of findings in accordance with established reporting procedures.

☐ L-1 ☐ L-2 ☐ L-3 ☐ L-4 ☐ L-5

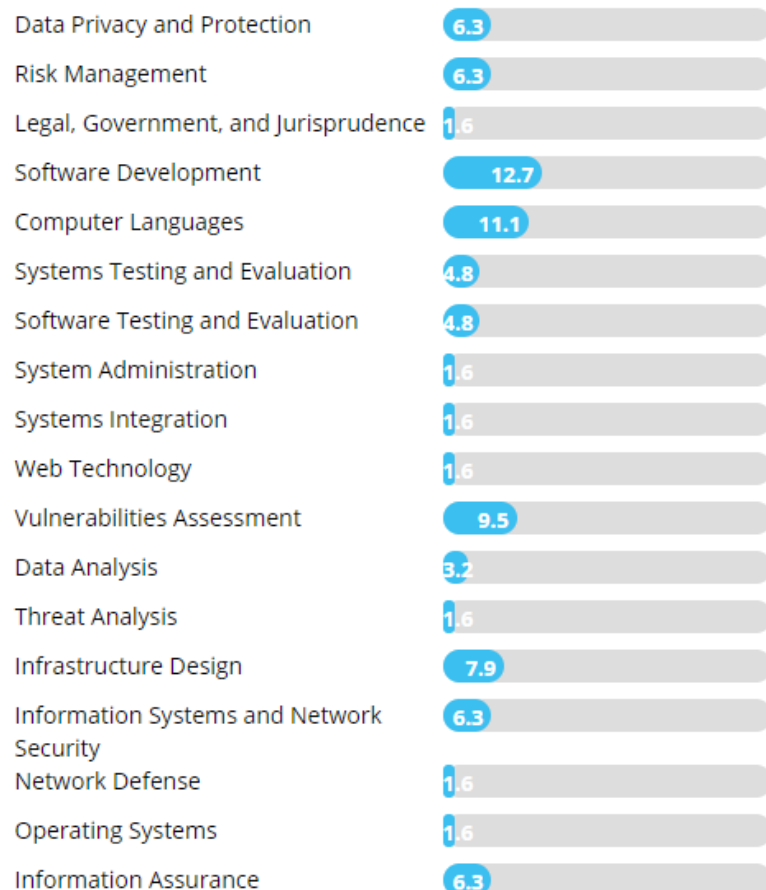
Assessment Output for: ATAYA

The results indicate a match with the following work role(s) and with specific competences. The indicated weight represents your degree of alignment with specific competences. We invite you to get back to this survey and to select additional work roles for which you run the assessment and complete your profile.

Your scoring in performing the tasks associated to each role encompassess the following Competences

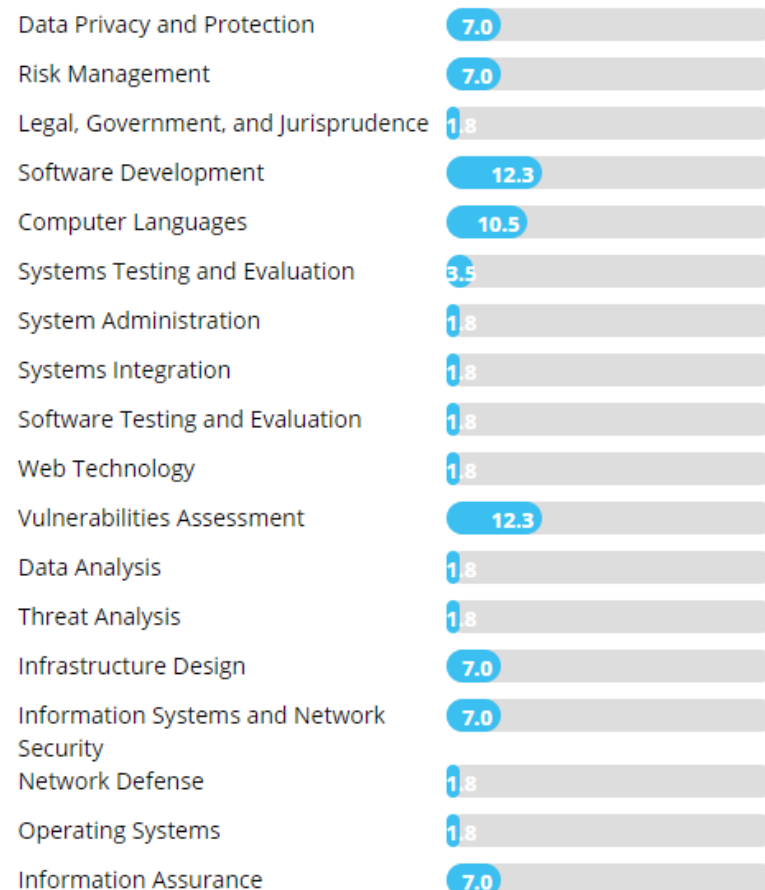
Workrole: Software Developer

Compatibility with the workrole on the basis of your scoring: 100%
Competences Associated in order of relevance for the role:



Workrole: Secure Software Assessor

Compatibility with the workrole on the basis of your scoring: 72%
Competences Associated in order of relevance for the role:



Relevant Competences Description:

Work Role: Software Developer

Management

Operational

Data Privacy and Protection

Securing data against unauthorized access, ensuring the proper collection and dissemination of data, and aligning with the legal implications associated with privacy laws

Risk Management

Activities related to the processes of risk assessment and mitigation of risk.

Legal, Government, and Jurisprudence

Activities related to laws, regulations, policies, and ethics that can impact organizational activities.

Technical

Application & Systems

Software Development

Activities related to the processes of creating software programs, embodying all the stages throughout the systems development life cycle

Computer Languages

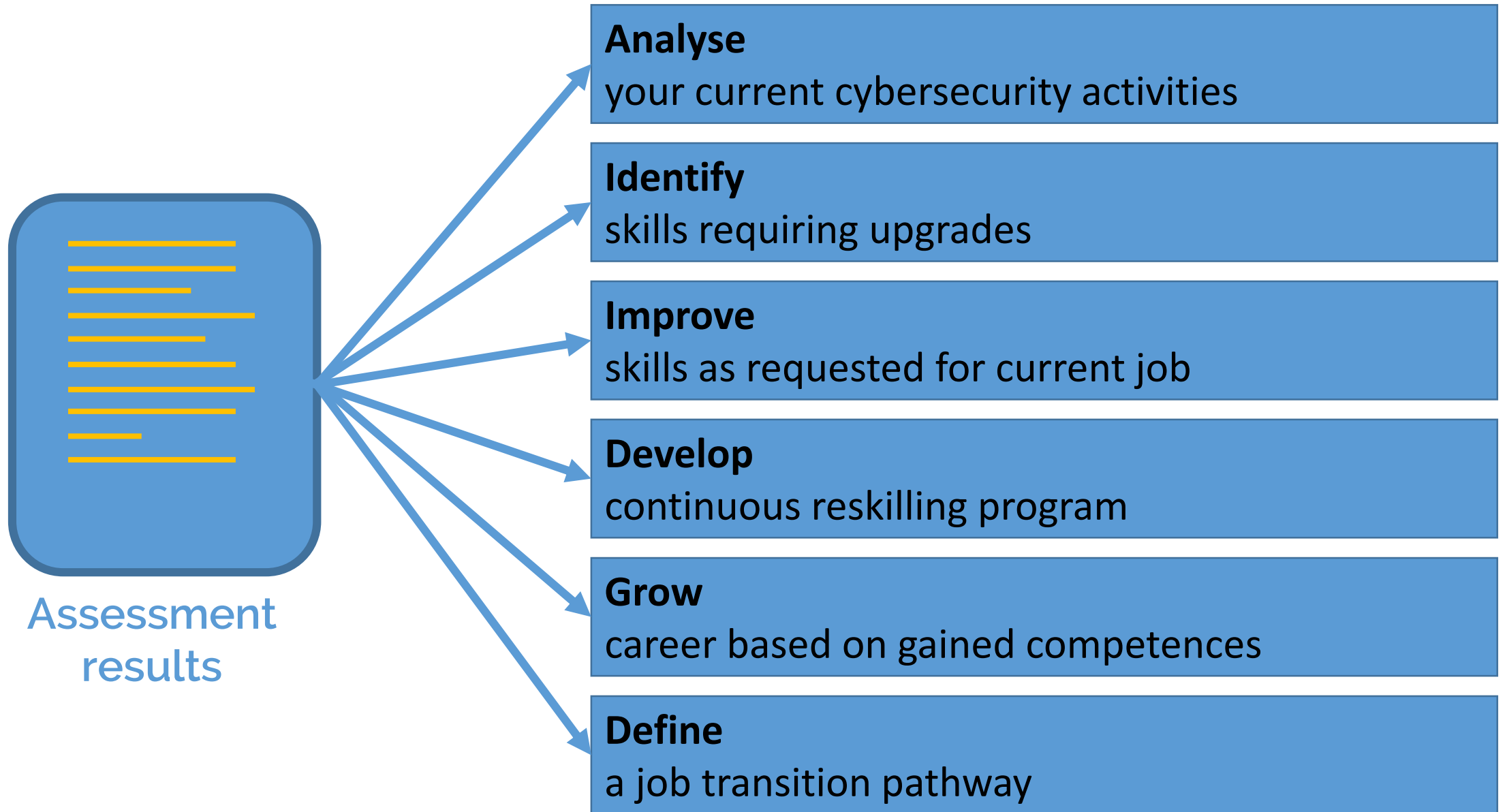
Activities related to computer languages and their applications to enable a system to perform specific functions.

Systems Testing and Evaluation

Activities related to the processes of analyzing and administering software test and evaluation procedures, as well as technical characteristics of IT systems, including identifying critical operational issues.

Software Testing and Evaluation

Activities related to the processes of analyzing and administering software test and evaluation procedures, as well as technical characteristics of IT systems, including identifying critical operational issues.



Professor, founder and Academic Director of Digital and
information security management at SBS-EM
Co-founder of the Belgian Cybersecurity Coalition
Co-founder DPO Circle
Member of the Advisory Board: Agoria, BECI, CIONET, ISACA,
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