

PARTNERSHIP

## Session Overview

e-CF practical application	KNVI – Liesbeth Ruoff	10
SFIA – how it is used for membership grading	IITPSA – Tony Parry	10
How the e-CF can be used in the system of education for IT professionals	PTI-IT Competence Council/Ministry of Digital Affairs - Bogusław Dębski	10
Cyber-Security specialism framework in Action	ACS – Anthony Wong	10
Customising & mapping frameworks	KNVI - Liesbeth Ruoff and others	15
Using frameworks for accreditation – the Trust aspect	IP3 SAC – Adrian Schofield	10
Let's get it done – Apply a framework in your context	Audience & speakers	20
Close	IP3 (Moira)	5

# A DIGITAL SKILLS PROFILE EVERYBODY (CAN) MAKE AND WORK WITH

## Customising and Mapping Frameworks

LIESBETH RUOFF - VAN WELZEN

- CHAIR SIG DIGITAL SKILLS KNVI
- MEMBER OF CEN COMMISSION TC428



IFIP.pdf - Adobe Acrobat Reader DC

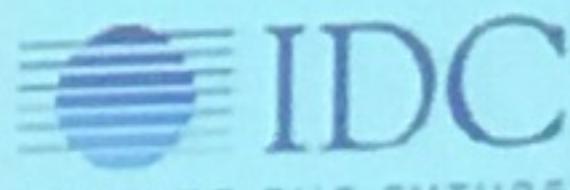
File Edit View Window Help

Home Tools IFIP.pdf 1 / 38 72,8% Export PDF Create PDF Edit PDF Comment Combine Files Organize Pages Redact Protect Optimize PDF Fill & Sign Send for Signature

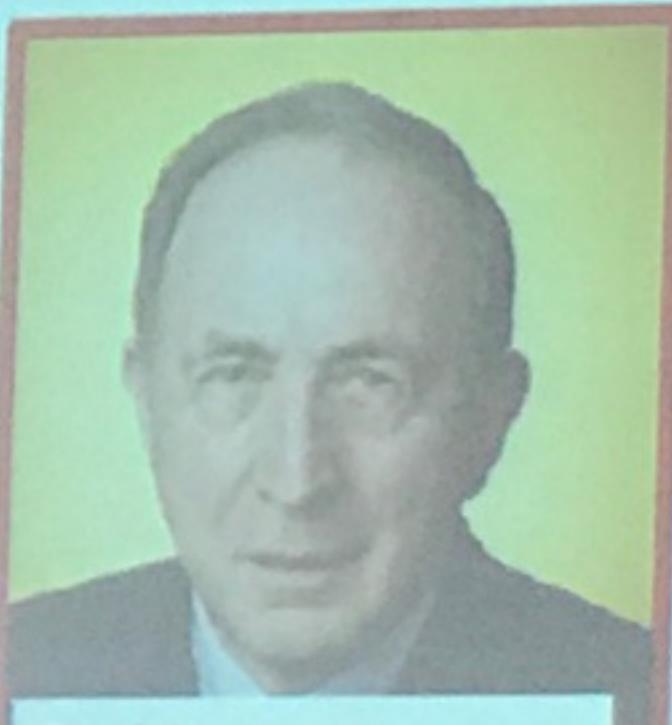
Convert and edit PDFs with Acrobat Pro DC Start Free Trial

09:34 ENG 21 Sep 2018

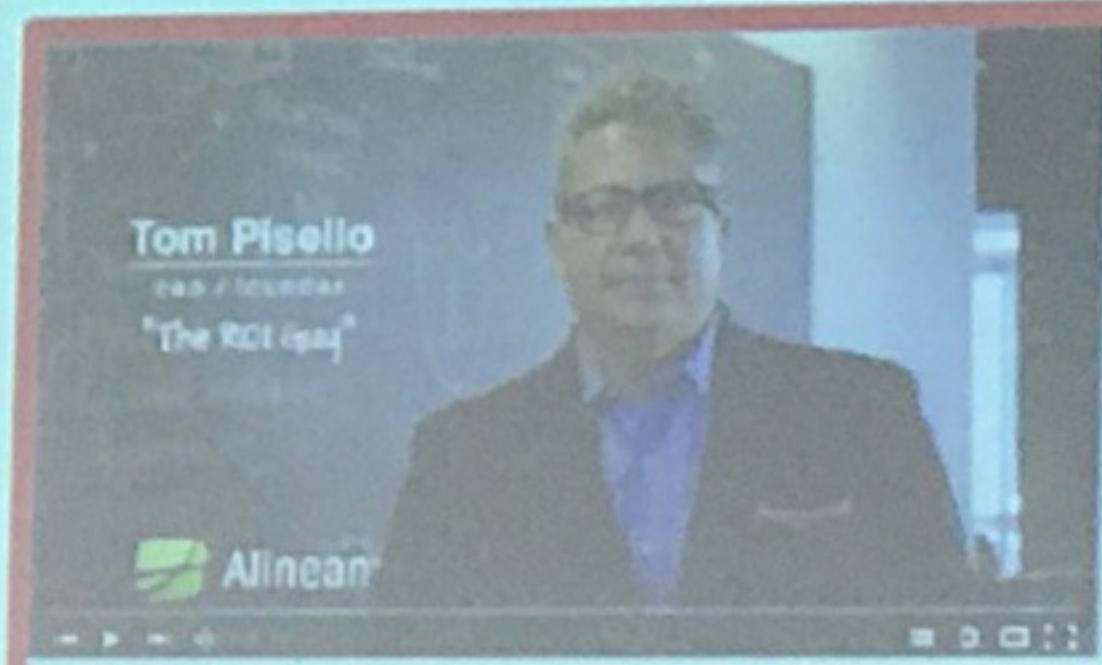
## INSPIRED BY



## STAFFING INDUSTRY ANALYSTS



Paul Strassmann  
Information  
Productivity



Total Talent Management
- Total workforce spend under management
- Complete workforce visibility
- Direct cost savings on bill rate and usage
- Customized SLA's and process
- Non-compliant spend elimination
- Increased total cost of ownership savings
- Additional productivity and process savings
- High degree of value added services

Managed Service Provider (MSP)
- Contingent workforce spend under management
- One point of contact
- Direct cost savings on bill rate and usage
- Customized SLA's and process
- Non-compliant spend elimination
- Increased total cost of ownership savings
- Additional productivity and process savings
- High degree of value added services

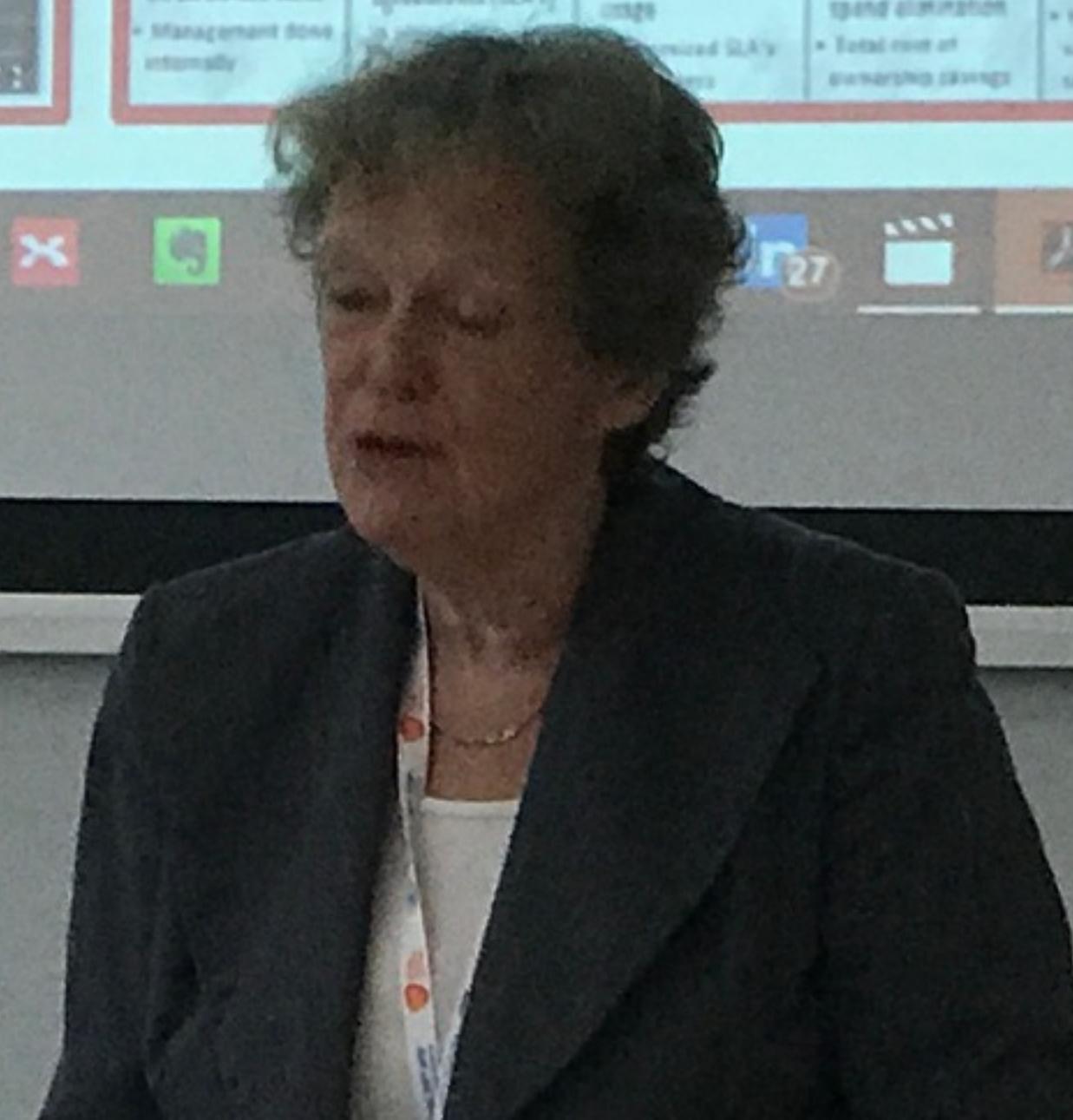
Master Vendor
- One supplier (possibly managing second and third tier suppliers)
- One point of contact
- Direct cost savings on bill rate and usage
- Customized SLA's and process
- Non-compliant spend elimination
- Total more of procurement savings

Decentralized
- Several suppliers
- Procurement done on ad-hoc basis
- Management done internally

- Export PDF
- Create PDF
- Edit PDF
- Comment
- Combine Files
- Organize Pages
- Redact
- Protect
- Optimize PDF
- Fill & Sign
- Send for Signature

Convert and edit PDFs  
with Acrobat Pro DC

Start Free Trial



RECAP

THE STRATEGIC ROLE OF ICT STANDARDISATION IN THE CONTEXT OF EU POLICY MAKING

ROLLING PLAN FOR ICT STANDARDISATION 2018

E-SKILLS AND E-LEARNING

In support of the objectives set out in the Communications "A New Skills Agenda for Europe", A Digital Single market strategy for Europe and "Skills for the 21st Century - Learning, Competitiveness, Growth and Jobs", the Commission is planning to issue in 2018 a recommendation for a comprehensive European framework for the ICT professions which would complement and build on the existing European reference frameworks.

The e-Competence Framework (EN 16258-1:2016) provides an efficient and broadly accepted common European language about knowledge, skills and competences of the ICT professional workforce and it has proved to be a useful benchmark for all EU industry sectors and SME companies. In 2017, the Commission initiated the first review of the EN 16258 with current business needs, framework development, digitisation of industry and ICT market trends.

BODIES OF KNOWLEDGE  
PROFESSIONAL ETHICS  
EDUCATION AND TRAINING  
COMPETENCES

Figure 10: The four main building blocks of ICT Professionalism

cen  
CENELEC

Export PDF

Create PDF

Edit PDF

Comment

Combine Files

Organize Pages

Redact

Protect

Optimize PDF

Fill & Sign

Send for Signature

Convert and edit PDFs with Acrobat Pro DC

Start Free Trial

09:41 ENG 21 Sep 2018

# BUILDING BLOCKS

DESCRIPTION OF A  
COMPETENCE

PROFILE  
DESCRIPTION

DELIVRABLES AND  
DESCRIPTION LIST

MATRIX OF  
COMPETENCE AND  
ROLE PROFILE

EUROPEAN ICT  
PROFILE FAMILY  
TREE

MATRIX OF  
DELIVRABLES AND  
ICT PROFILES

MAPPING  
STRUCTURE SRIA  
AND E-CF

ICT PROFILE  
TEMPLATE

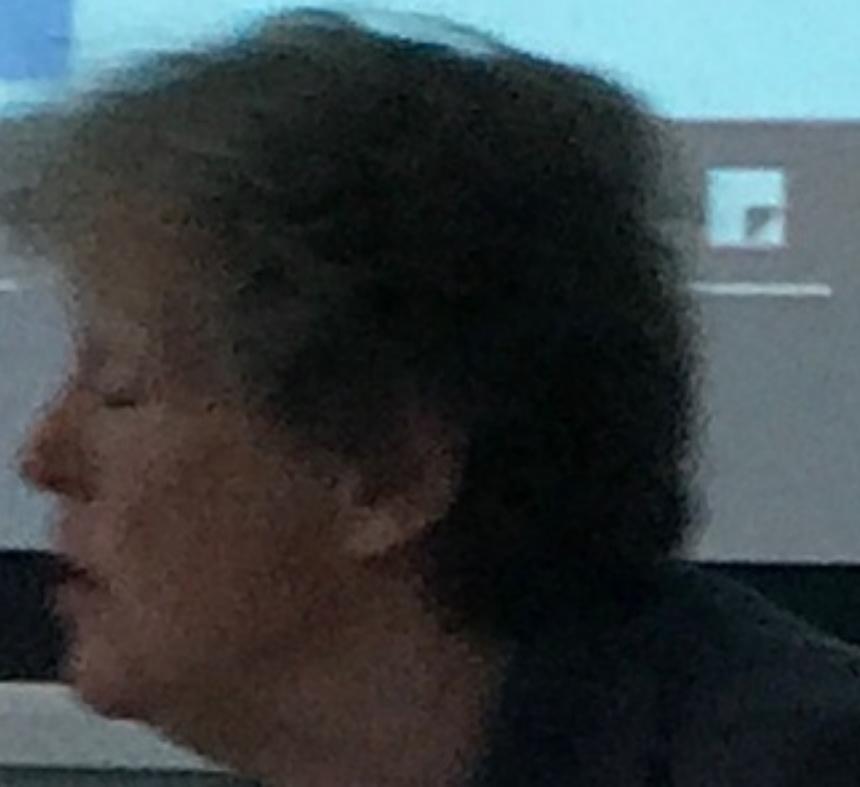
ICT PROFESSIONAL  
ROLE PROFILES-  
ESCO  
RELATIONSHIP

ADAPTATION  
TEMPLATE OF  
EXISTING PROFILES

- Export PDF
- Create PDF
- Edit PDF
- Comment
- Combine File
- Organize Page
- Redact
- Protect
- Optimize PD
- Fill & Sign
- Send for Sig

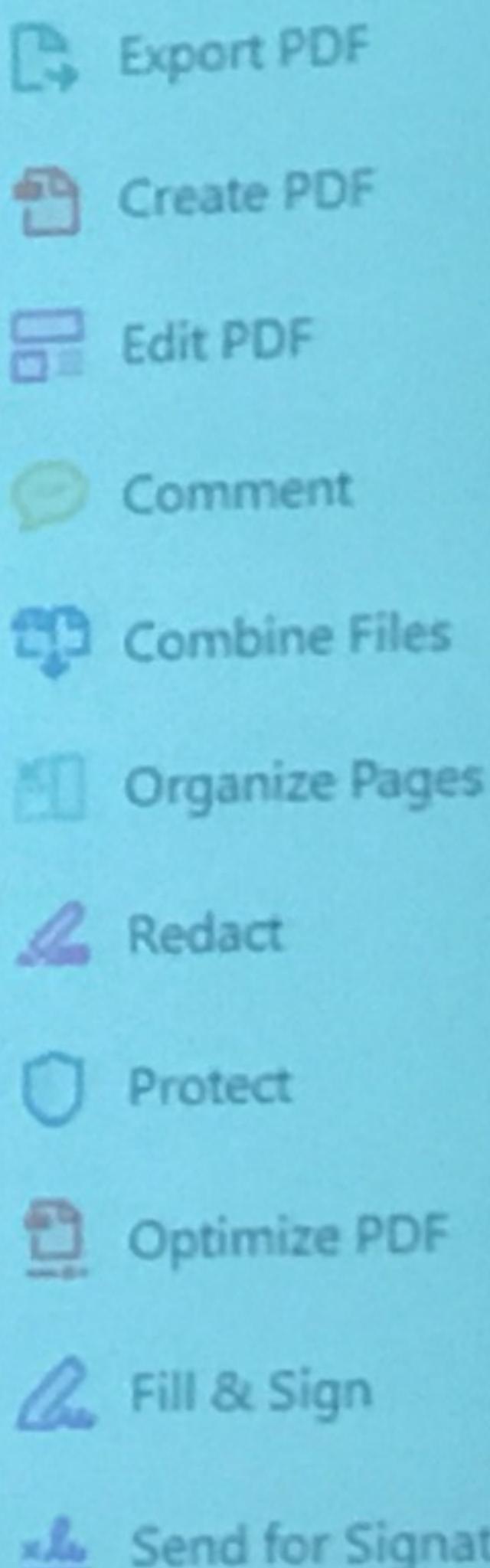
Convert and edit  
with Acrobat Pro

Start Free Trial



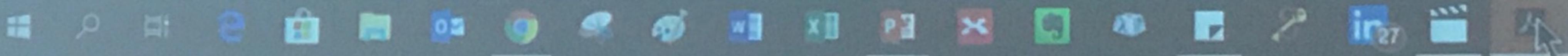
# Use cases Customising and Mapping e-CF Framework

- Job profiles for information security 2.0, PvIB QIS
- Supplier Management: KPN consulting IT-CMF – e-CF
- Data Science, EU-Edison project, University of Amsterdam
- E-CF<sub>o</sub>NEXT, profile tool / assessment of EXIN
- Rake-Shape, blockchain f.e. UWV, LRWA



Convert and edit PDF  
with Acrobat Pro DC

Start Free Trial



**USE CASE IT-CMF - KPN**  
*e-CF competencies – skills and knowledge*

# Supplier Management

Goal: Manage interactions between the IT function and its suppliers

SUM



Core statement: Innovatie via de supply chain

- People**
- A2 Service Level Management
  - D8 Contract Management
  - D4 Purchasing
  - E4 Relationship Management

Koppeling/ vergelijking tussen IT-CMF capability levels en eCF proficiency level:

- Level 1 en 2 bij prof. level 3
- Level 3 en hoger bij prof. level 4

- Artifacts**
- Supplier engagement model...
  - Supplier relationship mgt systems
  - SLA/OLA/UC(XLA)

- Process**
- IT Supplier Management
  - Procurement (order & fulfillment)
  - Cost management
  - Supply chain management (procurement)

**Beschrijving groei in levels: (knowledge en skills)**  
 Basis: A2: K1, D8: K1  
 2 -> 3: A2 + S1 + S2 D4: K5, D8: K1  
 3 -> 4: A2 K5 + S5, E4: S3  
 4 -> 5:

**POM's (doel)**

- 12. contact, escalaties en frequentie meetings: vaststellen, proces vaststellen, performance review meeting met suppliers, training voor major incidenten, contingency plan alt. suppliers
- 13. Assign relationship mgt, benchmark contracts, performance tracking, joint product development
- 14. intensificeren leveranciers in str. + oper. Meetings, CI's voor de supply chain, geharmoniseerde supplier mgt practices, richtlijnen voor weekdaglijst rapport, relationship mgt feedback
- 15. review supplier op switching flexibility en redundancy, functional relationship mgt practices, implement smart ordering programs

## Technology

- <relevante tooling die van toepassing is>
- Service Management tooling bijv. ServiceNow
  - ...

## Supporting capabilities

- Innovation Management (IM)
- Sourcing (SRC)
- Relationship Management (REM)
- Service Provisioning (SRP)

N.b. Uitgangspunt van de beschrijving van levels e.d. is de IT-CMF capability

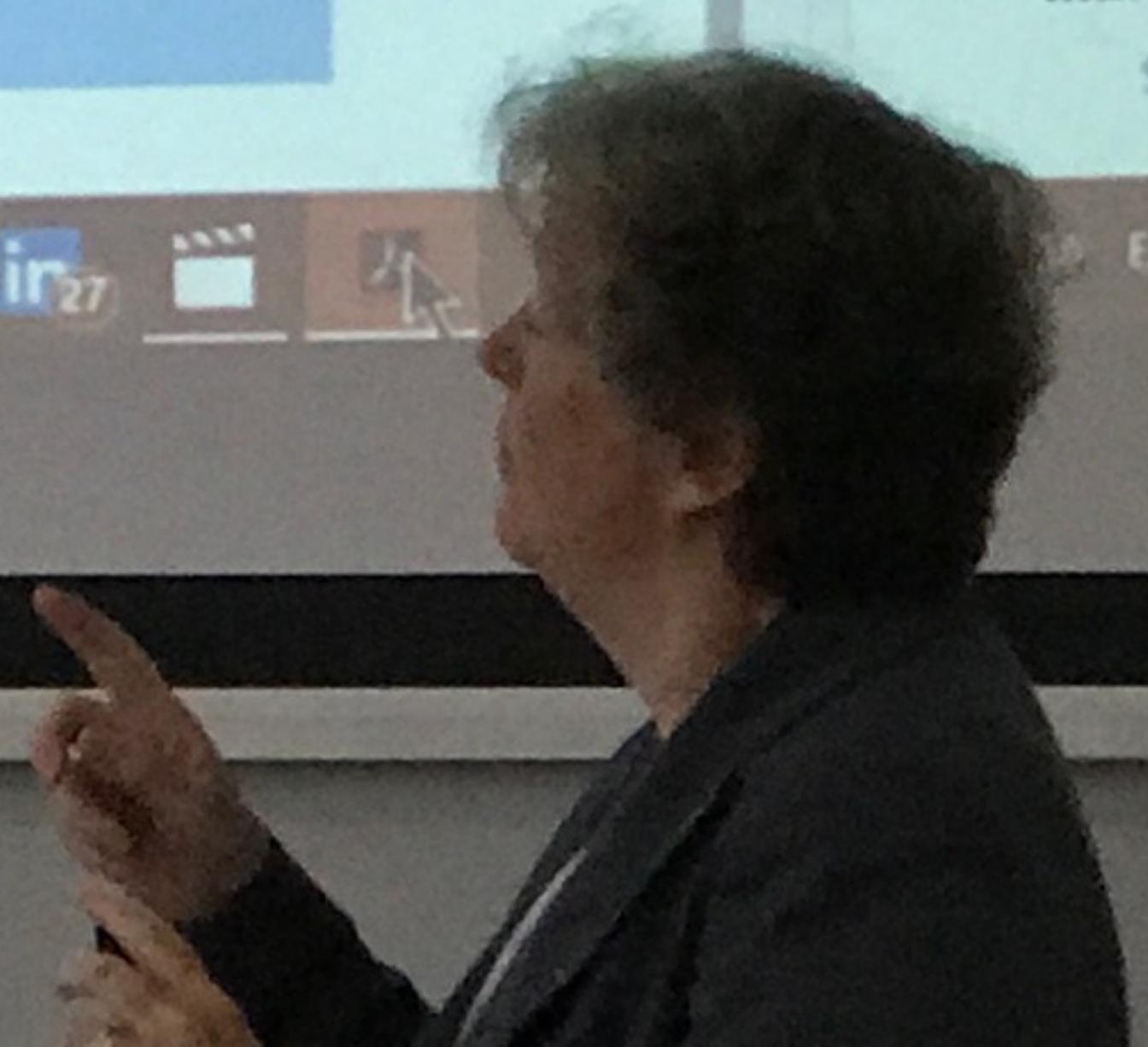
- Export PDF
- Create PDF
- Edit PDF
- Comment
- Combine Files
- Organize Pages
- Redact
- Protect
- Optimize PDF
- Fill & Sign
- Send for Signature

Convert and edit PDFs with Acrobat Pro DC

Start Free Trial

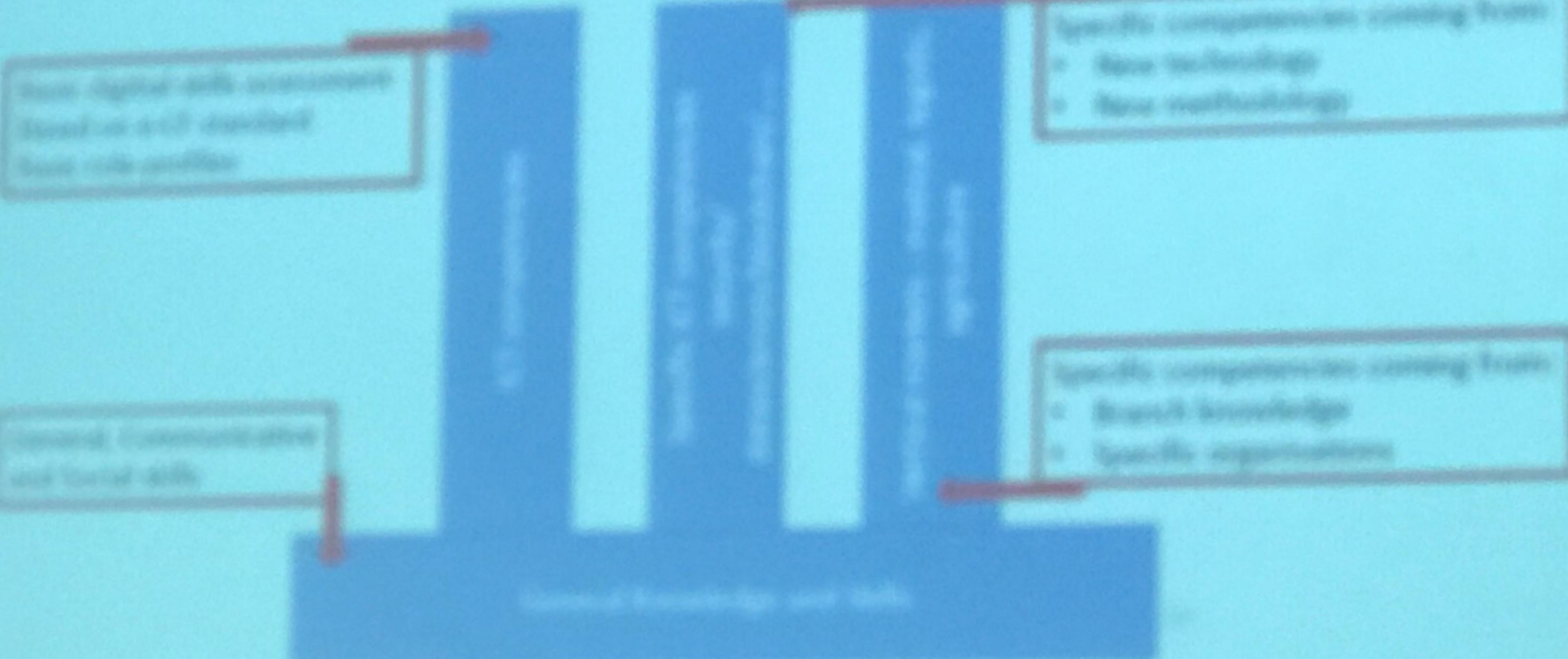
09:44

ENG 21 Sep 2018



\* 8.00 = - K 9 2 7 9 4

## RAKE-SHAPE in the DIGITAL WORLD



- Surface
- Create new
- Edit
- Delete
- Hide
- Show
- Hide selected
- Show selected
- Hide all
- Show all



International  
Professional  
Practice  
Partnership

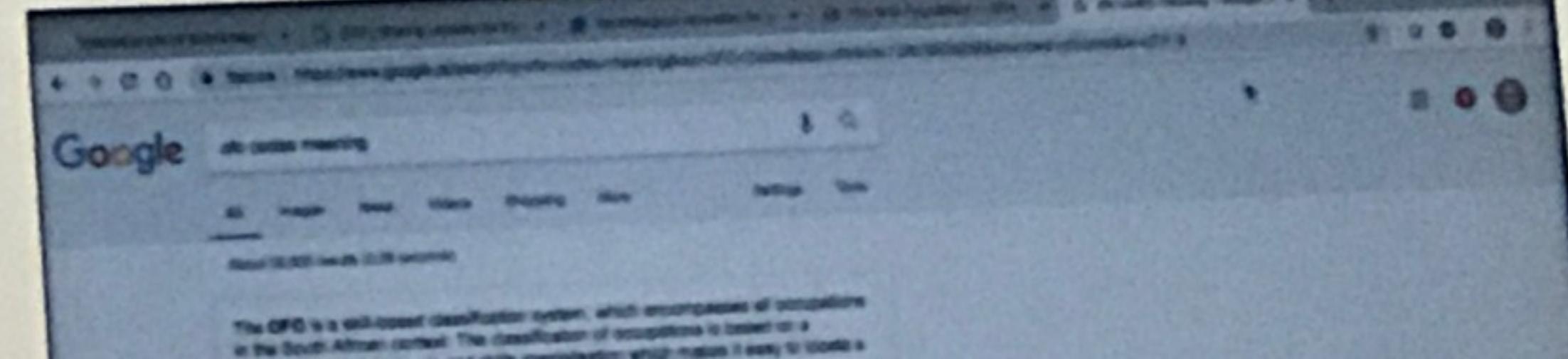
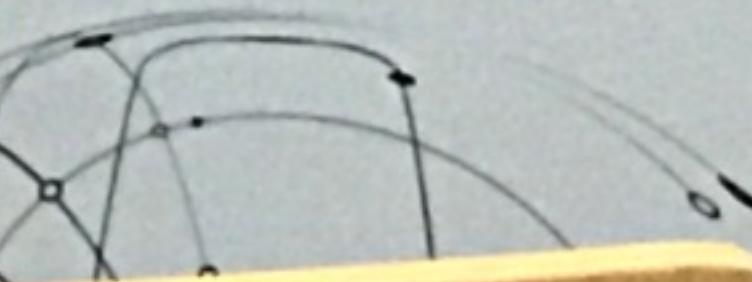
Partnering for Trust in Digital



ifip

## Partnering for Trust in Digital

Ensuring Trustworthy Computing  
Supporting the Information Society



Design Transitions Animations Slide Show Review View Help OFFICE REMOTE Soda PDF Creator Tell me what you want to do

Font Paragraph

12 10 8 6 4 2 0 2 4 6 8 10 12

1 IITPSA and SFIA Sept 2018.pptx  
2 IITPSA and SFIA Sept 2018.pptx  
3 IITPSA and SFIA Sept 2018.pptx  
4 IITPSA and SFIA Sept 2018.pptx  
5 IITPSA and SFIA Sept 2018.pptx  
6 IITPSA and SFIA Sept 2018.pptx

Promoting the ICT Professional  
[www.iitpsa.org.za](http://www.iitpsa.org.za)

# IITPSA and SFIA

Tony Parry FMIITPSA  
Chief Executive Officer

SFIA ACCREDITED PARTNER

Click to add notes

Notes

65%

09:49 21 Sep 2018

Promoting the ICT Professional

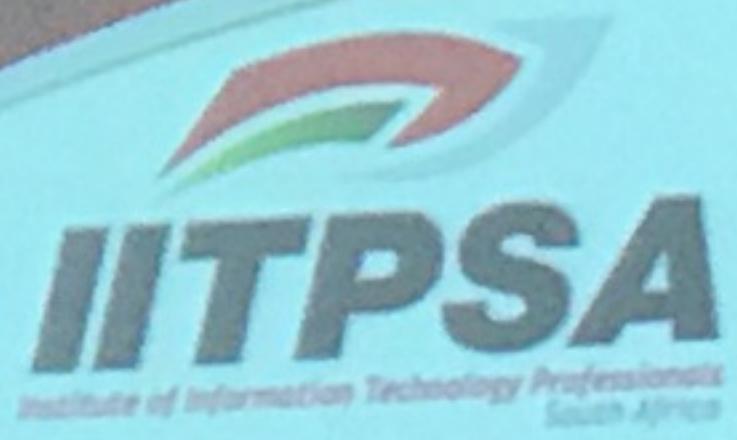
[www.iitpsa.org.za](http://www.iitpsa.org.za)



# IITPSA and SFIA

**Tony Parry** PMIITPSA  
Chief Executive Officer

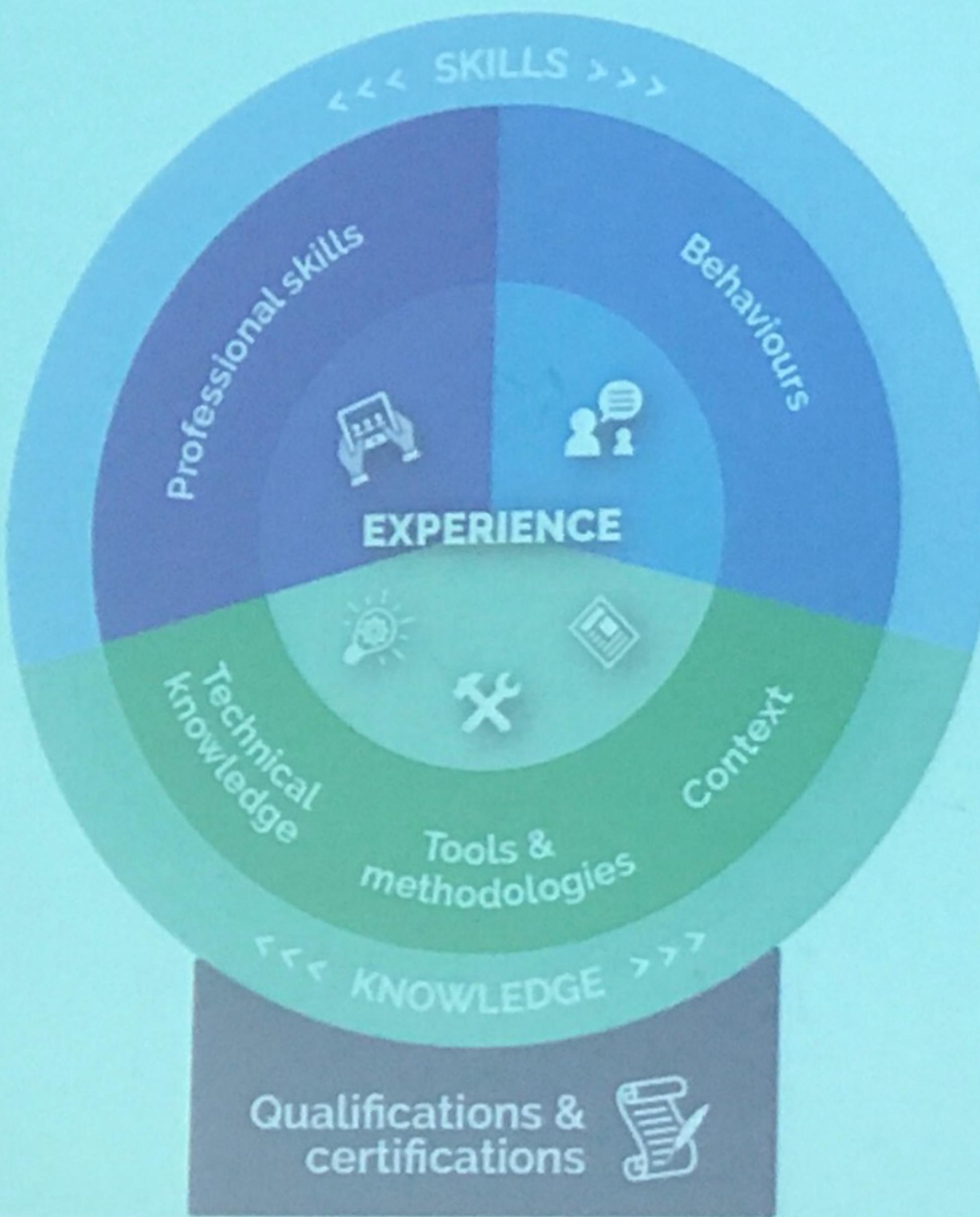




## Agenda

- Why SFIA?
- Current Experience
- Looking Ahead

## Why SFIA?



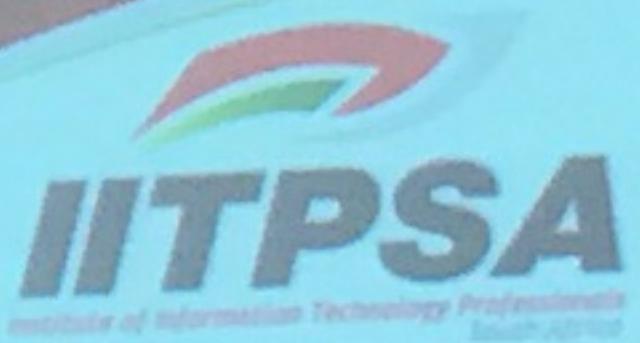
- Standardised approach
- Consistency
- Fairness
- SAQA
- IP3



## Current Experience

- Professional Designation (PMIITPSA)
  - IP3 accredited and SAQA registered
  - Peer Reviews (SFIA Level 5)
- Critical Skills Assessments (South Africa)
- "Assessing each case on its merits"





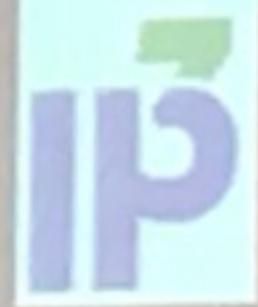
## Looking Ahead

- Growing our designations:
  - SFIA Level 3 ("Technologist")
  - SFIA Level 7 ("CIO")
- Need for flexibility in a rapidly changing environment



On  
September 18  
2018  
I spoke on  
Cyber-Security  
Framework  
Overview

- Cybersecurity, Privacy and Technological challenges – what are Organisation and Government seeking?
- Aligning Business and Organisation priorities with security professionals
- The Professionalisation of Cybersecurity and Privacy practitioners
- Challenges & key issues – is EU GDPR transforming the landscape?
- What if we don't?



acs.org.au



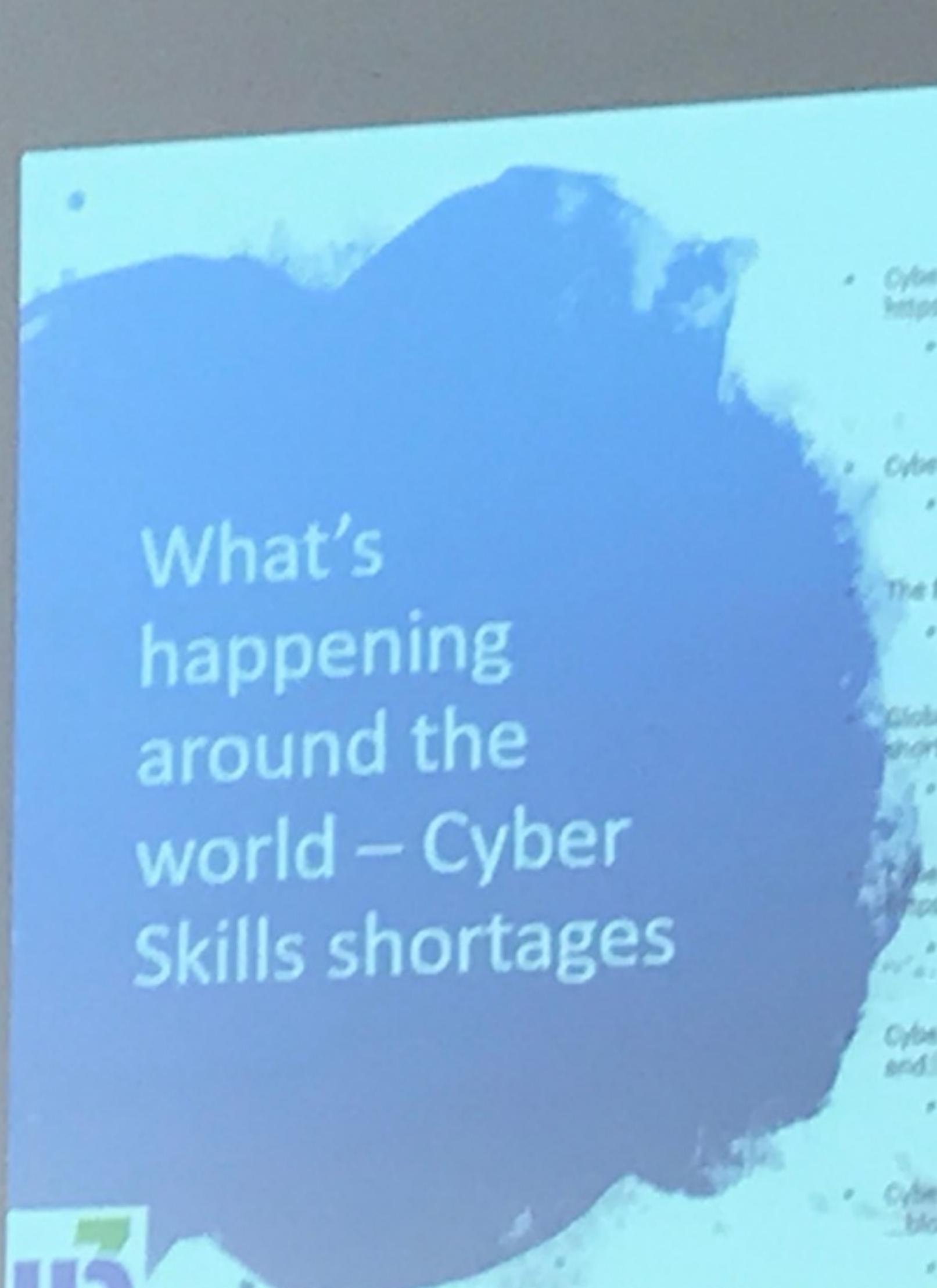
## Cyber-Security specialism framework in action

- What's happening around the world including EU GDPR?
- Framework for implementation



acs.org.au





## What's happening around the world – Cyber Skills shortages



- Cybersecurity labor crunch to hit 3.5 million unfilled jobs by 2021 – CSO <https://www.csionline.com/.../cybersecurity-labor-crunch-to-hit-3.5-million-unfilled-jobs-by-2021/>
  - Jun 6, 2017 - The cyber crime epidemic is expected to triple the number of open ... alone will need 1 million cybersecurity professionals by 2030 to meet the demands ... if that's true, then the cybersecurity workforce shortage is even worse ...
- Cybersecurity Jobs Report 2018-2021 – Cybersecurity Ventures <https://cybersecurityventures.com/jobs/>
  - Feb 23, 2018 - A 2016 skills gap analysis from ISACA estimated a global shortage of 2 million cybersecurity professionals by 2019 (a half-million more than ...)
- The Evidence Is in the Numbers: We Need More Cyber Security Pros <https://www.tripwire.com/.../news/the-evidence-is-in-the-numbers-we-need-more-cyber-security-pros/>
  - Mar 18, 2018 - Fighting Cyber Crime Requires Professionals, Talent Which Is in Short ... primary factors contributing to today's cyber security talent shortage:
- Global Shortfall of 1.8 Million Cyber Security Pros Expected by 2022 <https://www.rsssecurityplanet.com/.../global-shortfall-of-1.8-million-cyber-security-wor...>
  - Feb 16, 2017 - A recent survey of more than 19,000 cyber security professionals found that the world is expected to face a shortfall of 1.8 million cyber security ...
  - Cybersecurity world faces 'chronic shortage' of qualified staff [https://www.theregister.co.uk/2017/.../chronic\\_shortage\\_qualified\\_cybersecurity\\_staff...](https://www.theregister.co.uk/2017/.../chronic_shortage_qualified_cybersecurity_staff...)
    - Aug 24, 2017 - Cybersecurity world faces 'chronic shortage' of qualified staff ... per cent of them have reported a shortage of information security professionals.
- Cybersecurity Faces 1.8 Million Worker Shortfall By ... – Dark Reading <https://www.darkreading.com/careers-and-life/cybersecurity-1.8...shortfall.../1329084>
  - Jun 7, 2017 - (ISC)2's Global Information Security Workforce Study, which queried 19,000 cybersecurity professionals worldwide, found 66% of survey ...
- Cybersecurity Workforce Shortage Projected at 1.8 Million by 2022 [https://blog.isc2.org/isc2\\_blog/2017/02/cybersecurity-workforce-gap.html](https://blog.isc2.org/isc2_blog/2017/02/cybersecurity-workforce-gap.html)
  - Feb 19, 2017 - The workforce gap is estimated to be growing, with the projected shortage reaching 1.8 million professionals by 2022. While the gap is not ...

# What's happening around the world – Data Breaches



## Top stories

- [Use of data breaches and cyber attacks in July 2015 – 199,721,894](#)  
<https://www.governance.co.uk/> — [list of data breaches and cyber attacks in July 2015] Jul 30, 2015 - Imagine human error will continue to be the main cause of data breaches for decades to come – damn humans. I count this month's list of ...
- [Use of data breaches and cyber attacks August 2015 – 215,000,000](#)  
<https://www.governance.co.uk/> — [list of data breaches and cyber attacks August 2015] Aug 29, 2015 - As we end the near of August, it's time to tally up the month's breaches.
- [These are 2015's biggest hacks, leaks, and data breaches | ZDNet](#)  
These were the most prominent data breaches in 2015. Jul 24, 2015 - January: A database used by the Department of Homeland Security's Office of the Inspector General was confirmed breached in January. —
- [Hackers stole customer credit cards in Newegg data breach TechCrunch](#) - 23 hours ago
- [BA fined £100 over data breach that hit Britons BBC News](#) - 13 hours ago
- [BA fined £500,000 for data breach of 15m UK customers Telegraph.co.uk](#) - 13 hours ago



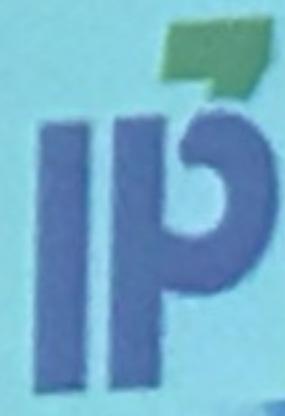
## What's happening around the world including EU General Data Protection Regulation (GDPR)

- The EU leads the world in legislating to protect and provide access to personal data with its EU General Data Protection Regulation (GDPR)
  - Replacing the 1995 Data Protection Directive in May 25, 2018
- Who is caught by the GDPR?
- Businesses with an establishment in the EU or that offer goods and services in the EU, or that monitor the behaviour of individuals in the EU may need to comply
  - Significant penalties for non-compliance => fines up to 20 million Euros or 4 per cent of global turnover

## EU General Data Protection Regulation (GDPR)

### Some Key Considerations

- Require businesses to take appropriate technical and organisational security measures, including effective cyber security measures.
- Accountability and governance - Accountability principle in GDPR Article 5(2) requires demonstration of compliance with the principles.
- Enhanced measures including:
  - Data minimisation;
  - Pseudonymisation;
  - Transparency;
  - Allowing individuals to monitor processing; and
  - Creating and improving security features on an ongoing basis.
- Use of Privacy Impact Assessments (PIA) where appropriate.
- Records of processing activities (documentation).
- Obligation to provide comprehensive, clear and transparent privacy policies.
- In many circumstances, controllers and processors will need to appoint Data Protection Officers (DPOs).



# EU General Data Protection Regulation (GDPR) transforming the landscape



**Art. 37 GDPR requires designation of the data protection officer in certain circumstances:**



**Art. 39 GDPR Tasks of the data protection officer include at least the following tasks:**



**Art. 32 GDPR Security of processing**

*And "on the basis of professional qualities and, in particular, expert knowledge of data protection law and practices and the ability to fulfil the tasks referred to in Article 39"*

to inform and advise in relation to obligations pursuant GDPR (including Art. 32 GDPR Security of processing)

to monitor compliance with ...in relation to the protection of personal data

—  
taking into account the state of the art, the costs of implementation and the nature, scope, context and purposes of processing as well as the risk of varying likelihood and severity for the rights and freedoms of natural persons, the controller and the processor shall implement appropriate technical and organisational measures to ensure a level of security appropriate to the risk...

—

## ACS Cyber Security Specialism

### Background

- Developed in Australia by the ACS.
- Designed to provide a level of Assurance, Trust and to address the growing shortage of cyber security expertise.
- Launched by Australian Minister Assisting the Prime Minister for Cyber Security, the Hon Dan Tehan in Canberra in Sept 2017.
- Adopted by IFIP IP3 as a new specialism certification for member societies around the world.
- ACS support for the implementation of the Australian International Cyber Engagement Strategy announced by the Hon Julie Bishop MP, Minister for Foreign Affairs in October 2017.
- Raise professional standards for cyber security specialists.
- Highlight the Duty of Care for cyber security professionals.

## ACS Professional Certifications

### Background

Certified Professional (CP) is aligned to level 5 of the Skills Framework for the Information Age accredited by IFIP IP3.

Certified Technologist (CT) is aligned to level 3 of the Skills Framework for the Information Age accredited by IFIP IP3.



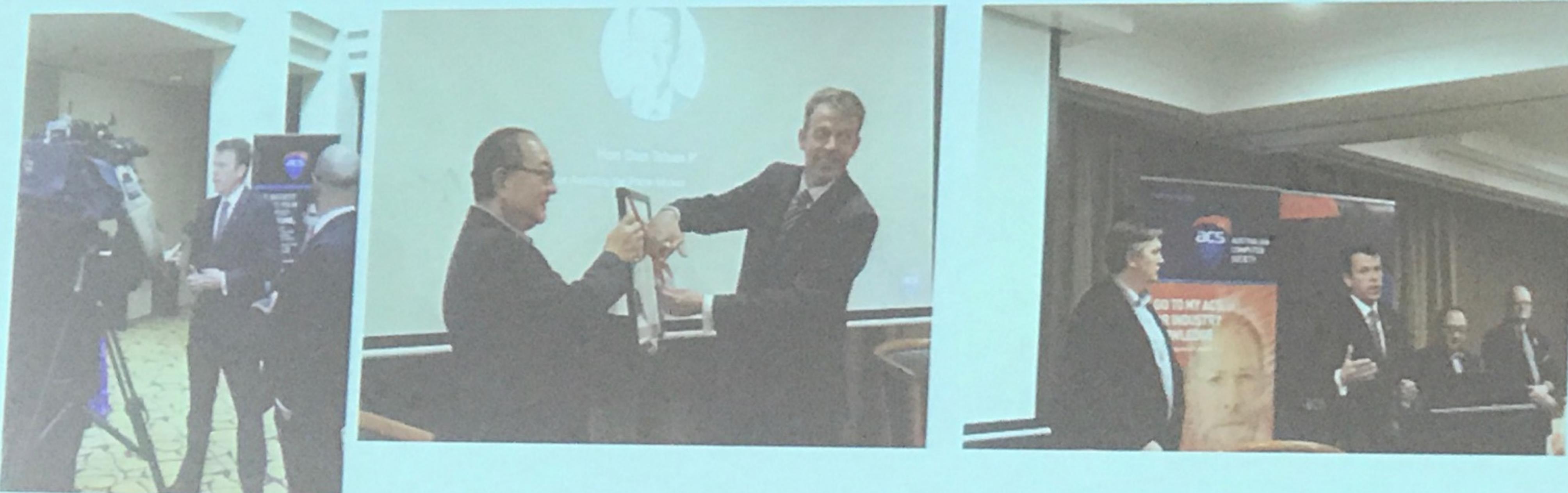
[acs.org.au](http://acs.org.au)



## ACS Professional Certifications

### Background

In September 2017, ACS announced an extension of our professional certifications scheme by introducing Cyber Security specialisations.



[acs.org.au](http://acs.org.au)



## ACS Professional Certifications

### Certified Professional – Cyber Security

Reflecting the multi-disciplinary nature of Cyber Security, flexibility was consciously built into the specialism assessment process.

An applicant must be able to demonstrate in-depth capability in four skills from the following list of level 5 (or higher) of the Skills Framework for the information Age (SFIA). SFIA skills must be from the following skills:

- IT Governance
- Information Management
- Information Security
- Information Assurance
- Business Risk Management
- Penetration Testing

- Security Administration
- Programming/Software Development
- Systems Software
- Testing
- Asset Management

## ACS Professional Certifications

### Certified Technologist – Cyber Security

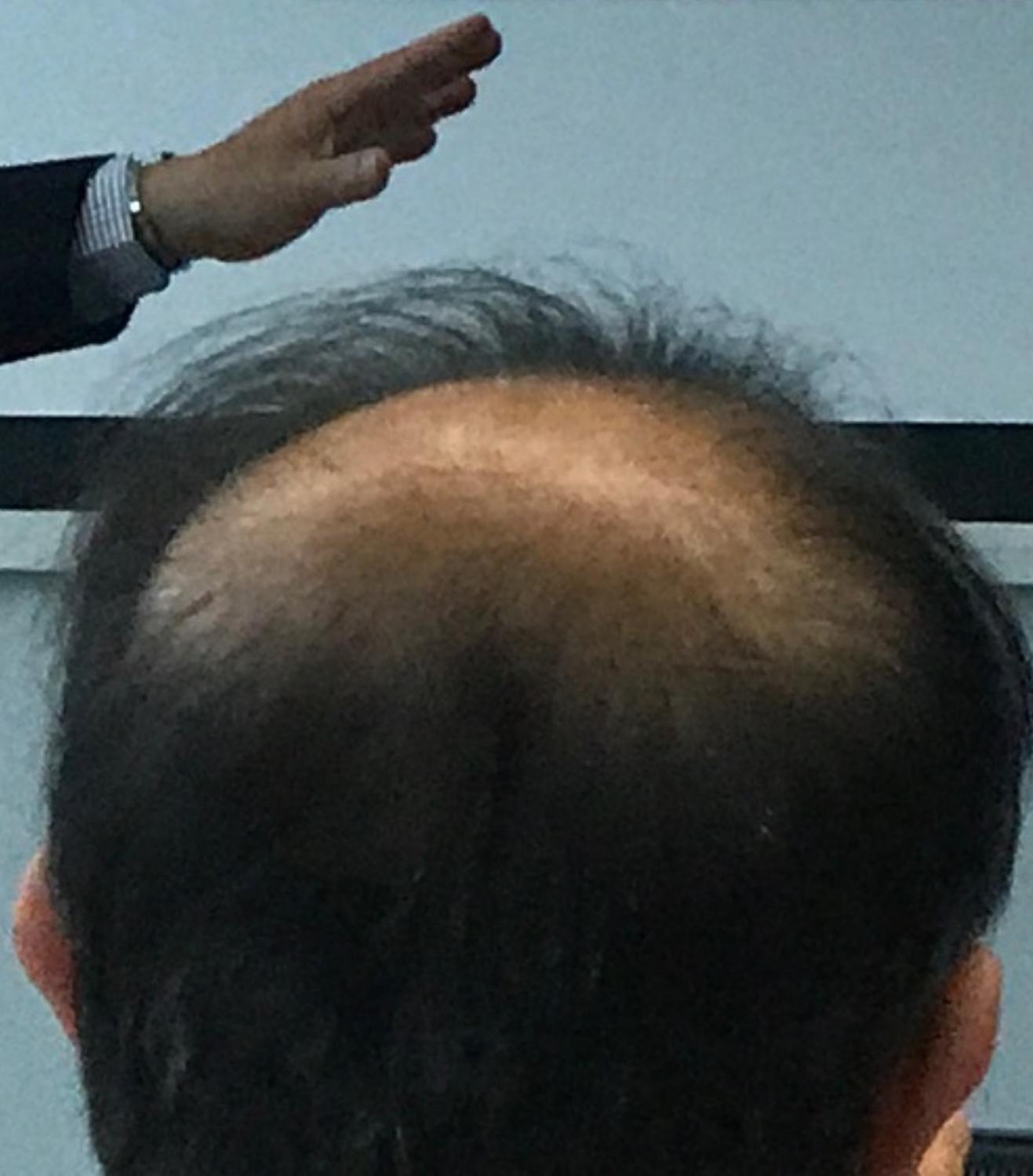
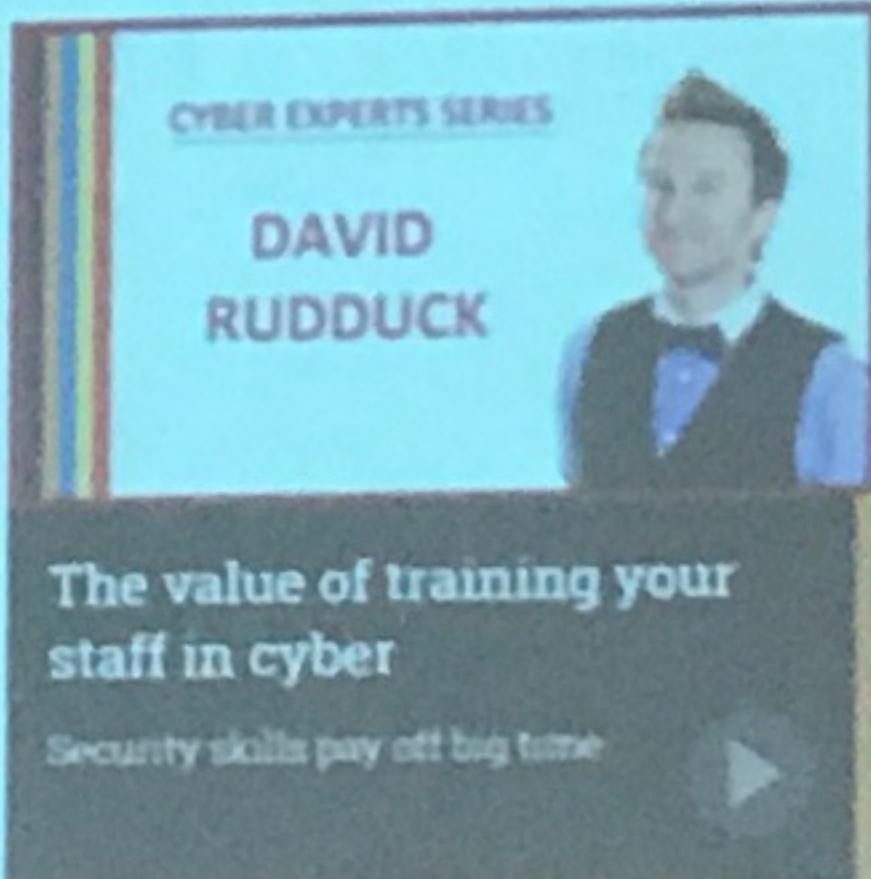
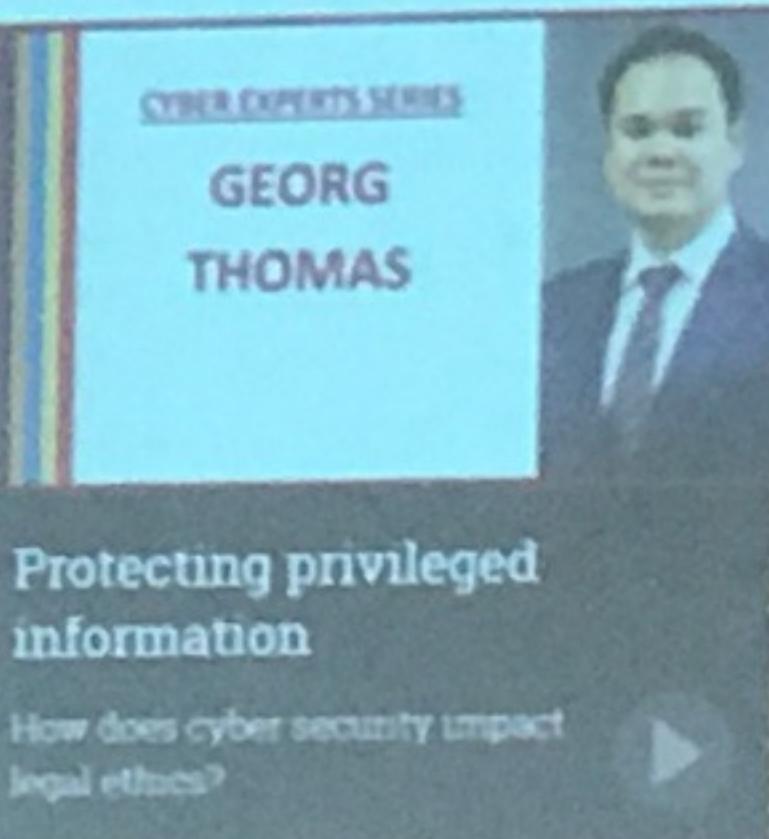
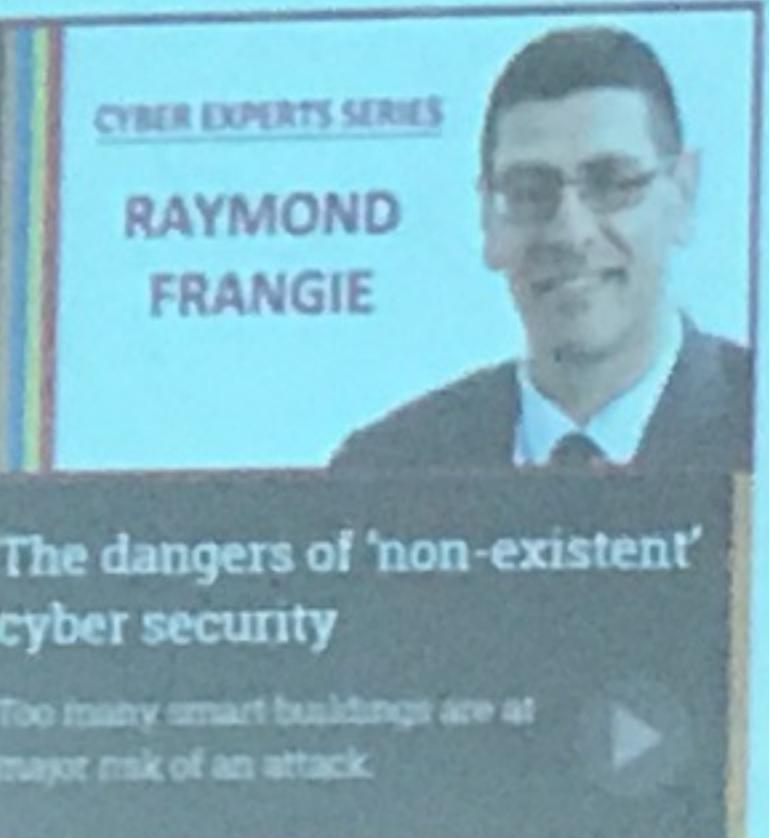
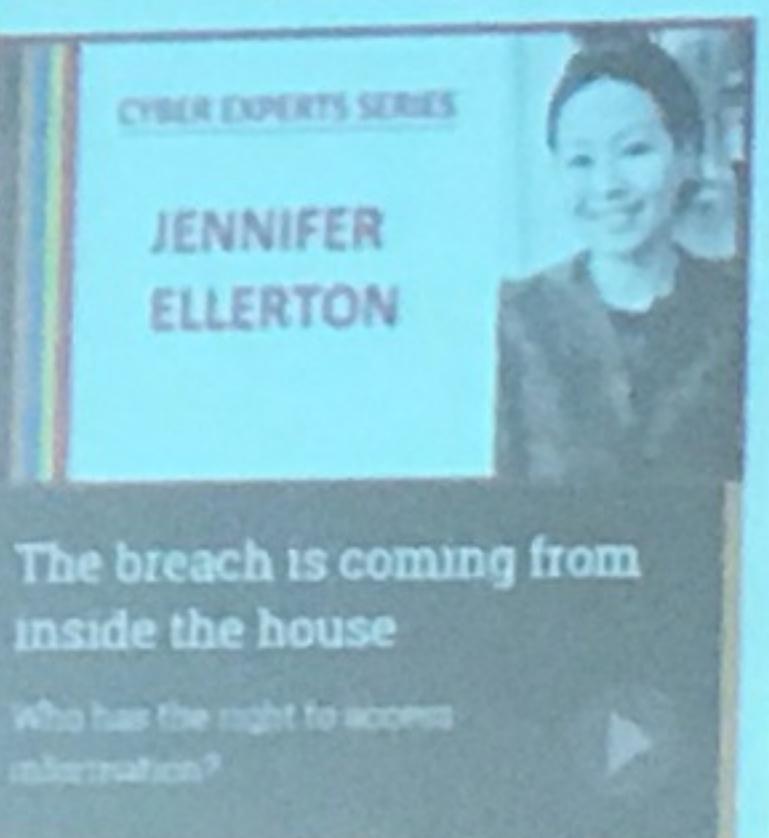
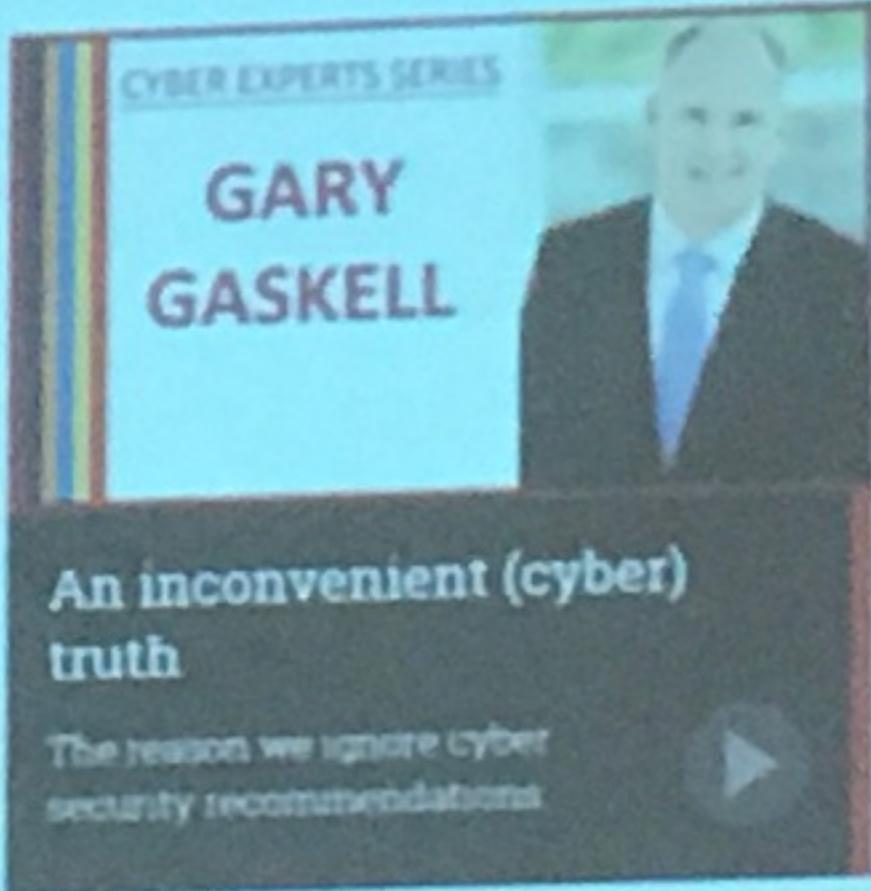
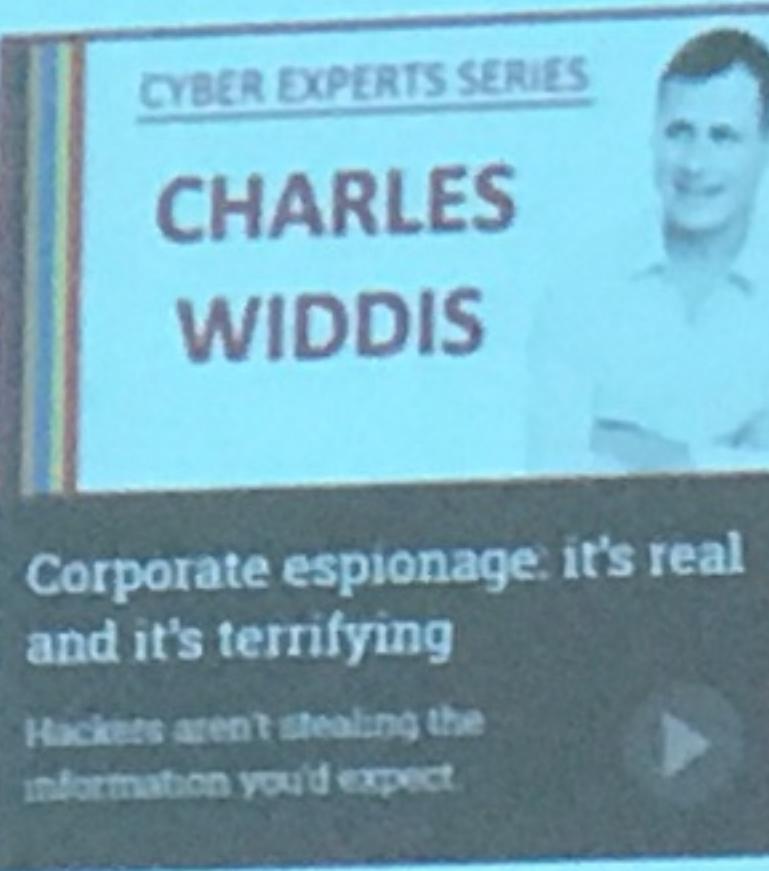
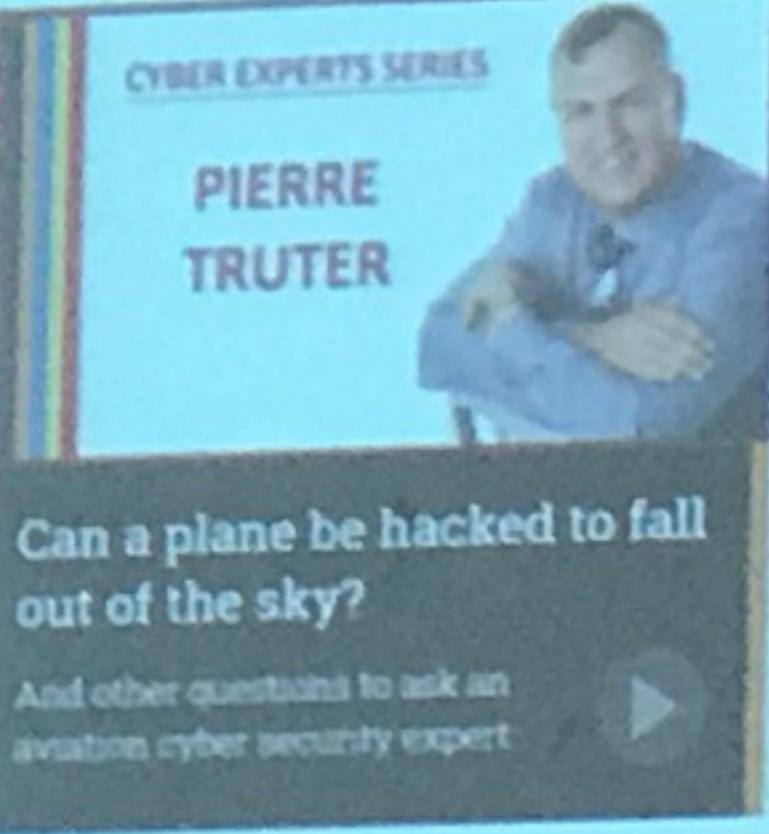
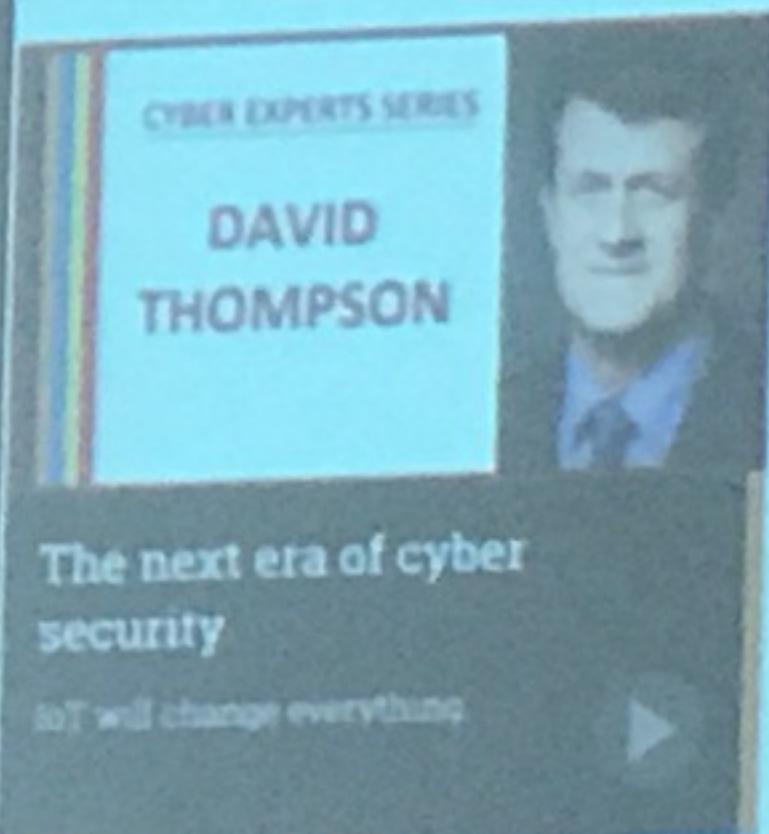
For CT - an applicant must be able to demonstrate in-depth capability in four skills from the following list of level 3 (or higher) of the Skills Framework for the information Age (SFIA). SFIA skills must be from the following skills:

- Information Management
- Information Security
- Information Assurance
- Business Risk Management
- Systems Development Management
- Asset Management
- Change Management
- Security Administration
- Incident Management
- Conformance Review

## ACS Professional Certifications

### Background

50+ Certified Professional (Cyber Security) across aviation, banking and finance, audit and risk, consulting, healthcare.



# e-CF in Computer Science education

Bogusław Dębski  
PTI-IT Competence Council/Ministry of Digital Affairs



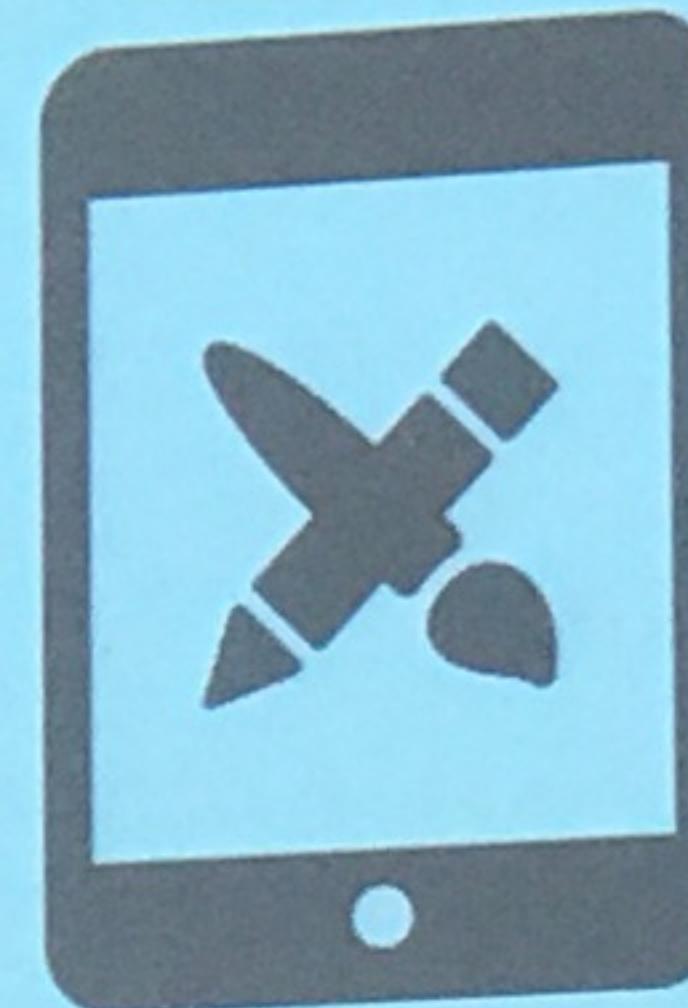
PTI-IT Competence  
Council



e-CF in  
Computer  
Science  
education

How the e-CF can be used in  
the education system for  
ICT Professionals

## e-CF in Computer Science education

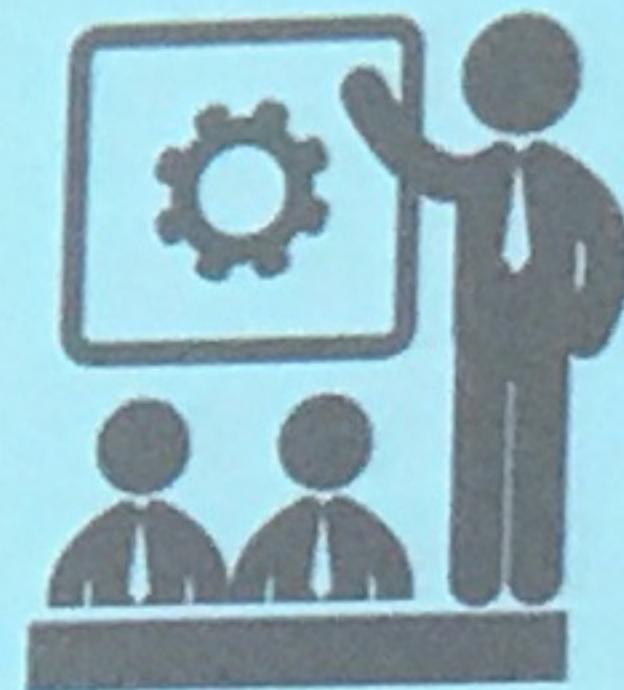


e-CF In an Academic environment

The e-CF at the Computer  
Science Faculty of Technical  
University

The Faculty of Electrical and Computer  
Engineering of Rzeszów University of  
Technology (Poland)

## e-CF in Computer Science education

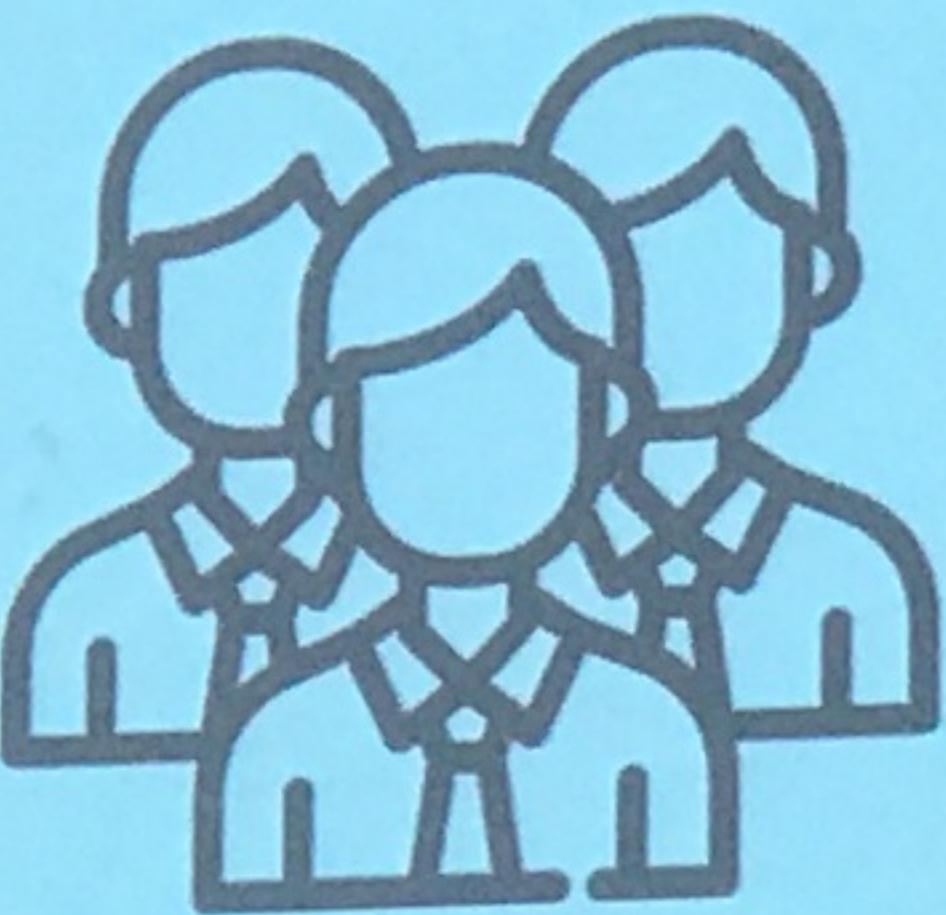


...high school and vocational  
school students

... the foundation of the creation  
of the future ICT professionals

... the foundation for the  
development of the future ICT  
professionals

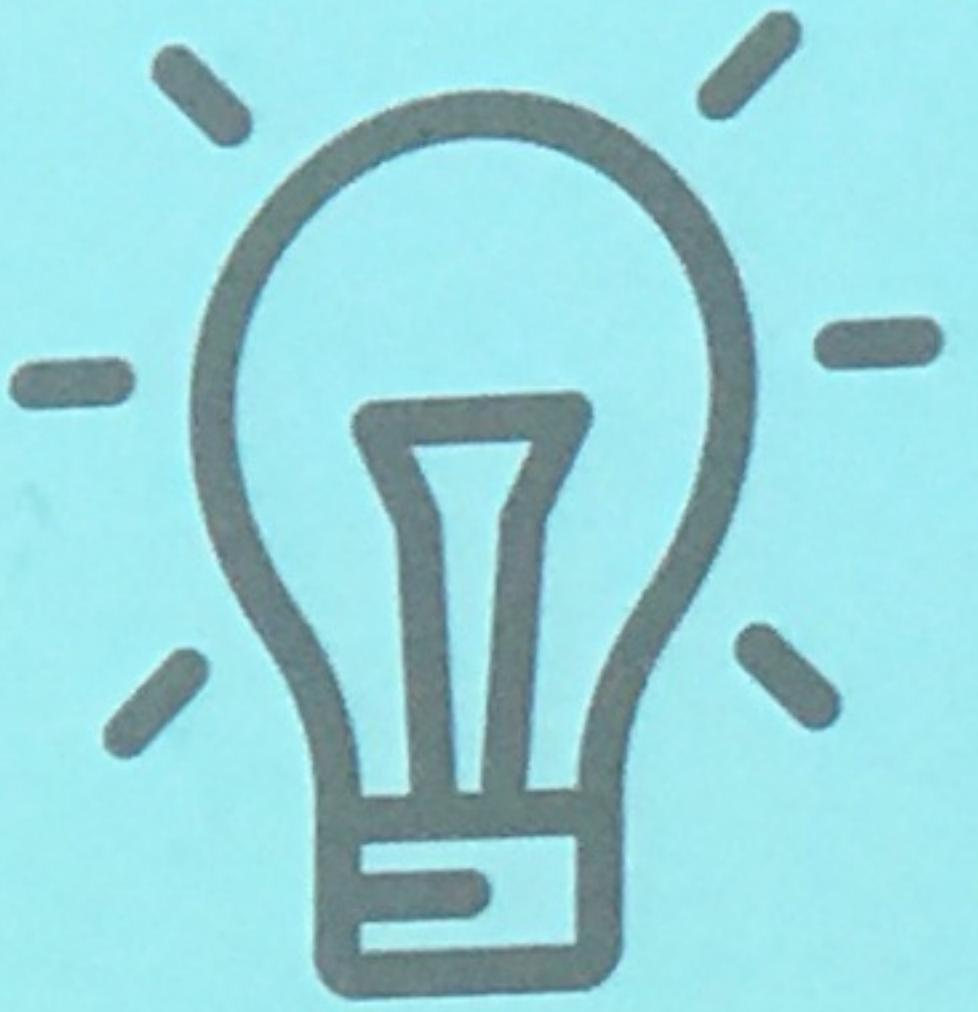
## e-CF in Computer Science education



... discussions with stakeholders  
about what should be taught in  
high school and vocational  
schools

- teachers,
- headmasters,
- school management,
- educational authorities,
- employees,
- entrepreneurs

## e-CF in Computer Science education

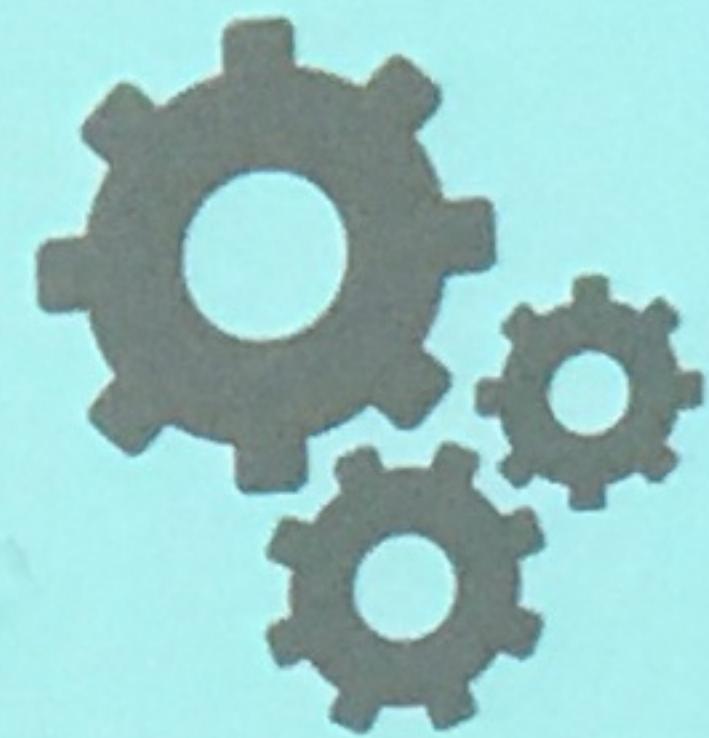


Story of success

We found the e-CF !

## e-CF in Computer Science education

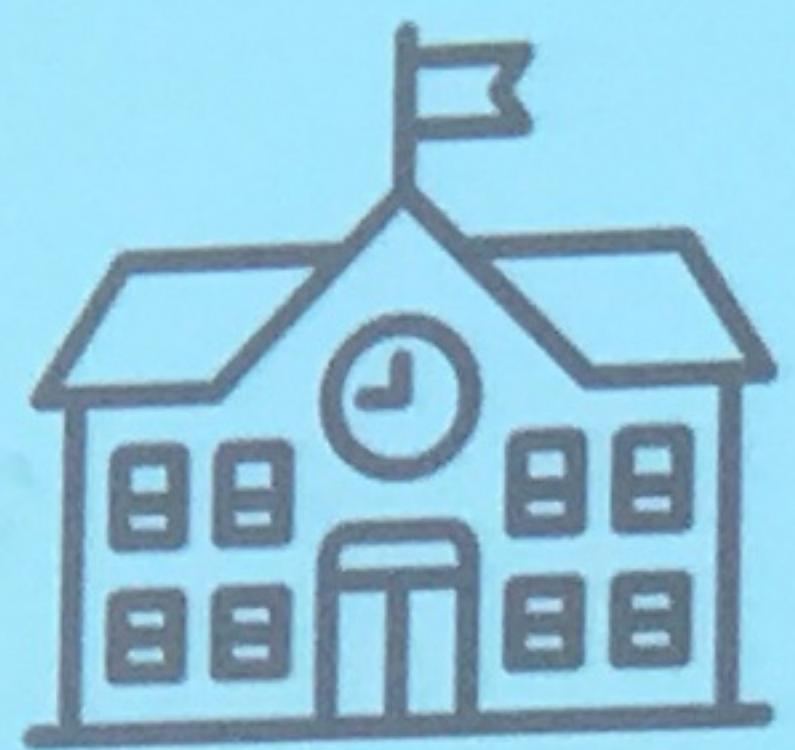
### ~~BLANK SHEET OF PAPER~~



Using the e-CF and its 40 competences helped to speed up our work

So we took the competence framework, we went through its 40 competences and on this base we actually created a common language

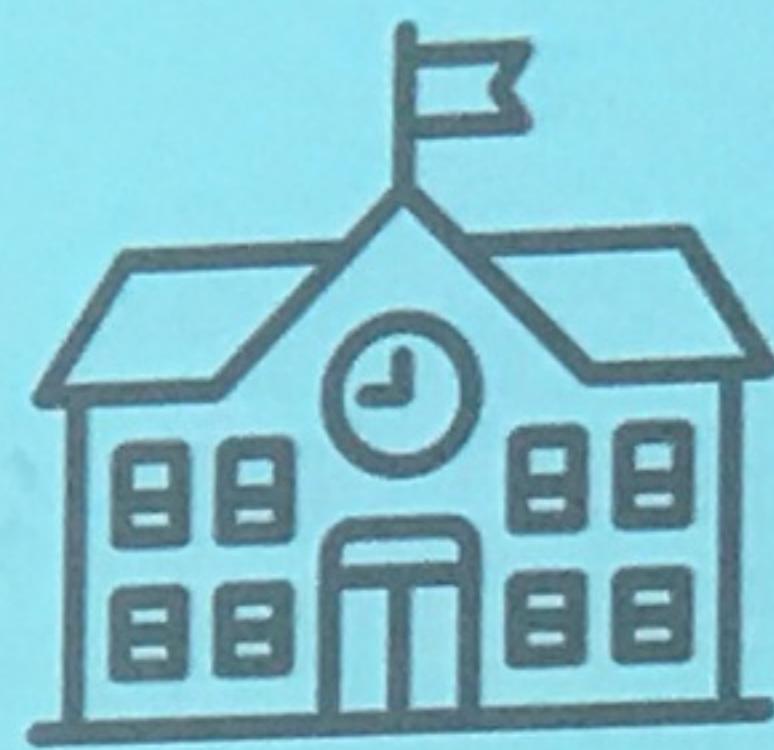
## e-CF in Computer Science education



For our goals the 4th dimension is the most useful one.

**"Samples of knowledge and skills relate to e-Competences in dimension 2. It means relate to 40 competences identified in total provide the European generic reference definitions of the framework."**

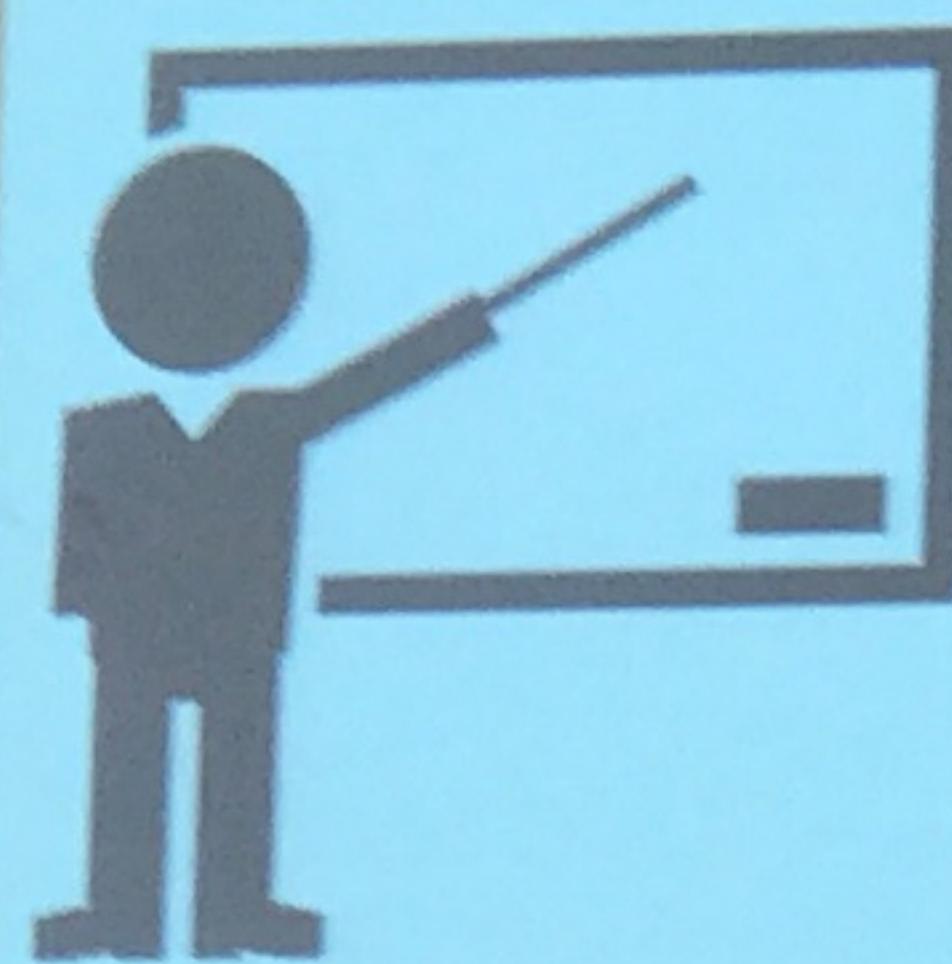
## e-CF in Computer Science education



When I think about e-CF, I know that, it is connected with real life and real labor market.

**That is the power of e-CF.**

## e-CF in Computer Science education



... in my opinion the e-CF is the most matured framework that provides reference about ICT for the high and vocational schools.

The use of e-CF terminology helps stakeholders who create descriptions of new professions taught in high and vocational schools with.



# Customising and Mapping Frameworks

LIESBETH RUOFF - VAN WELZEN

- CHAIR SIG DIGITAL SKILLS KNVI
- MEMBER OF CEN COMMISSION TC428



Convert and edit PDFs  
with Acrobat Pro DC

Start Free Trial

# AVAILABLE BUILDING BLOCKS

DESCRIPTION OF A COMPETENCE

PROFILE DESCRIPTION

DELIVRABLES AND DESCRIPTION LIST

MATRIX OF COMPETENCE AND ROLE PROFILE

EUROPEAN ICT PROFILE FAMILY TREE

MATRIX OF DELIVRABLES AND ICT PROFILES

MAPPING STRUCTURE SFIA AND E-CF

ICT PROFILE TEMPLATE

ICT PROFESSIONAL ROLE PROFILES-ESCO RELATIONSHIP

ADAPTATION TEMPLATE OF EXISTING PROFILES

Export PDF

Create PDF

Edit PDF

Comment

Combine Files

Organize Pages

Redact

Protect

Optimize PDF

Fill & Sign

Send for Signature

Convert and edit PDFs  
with Acrobat Pro DC

Start Free Trial

10:26

21 Sep 2018



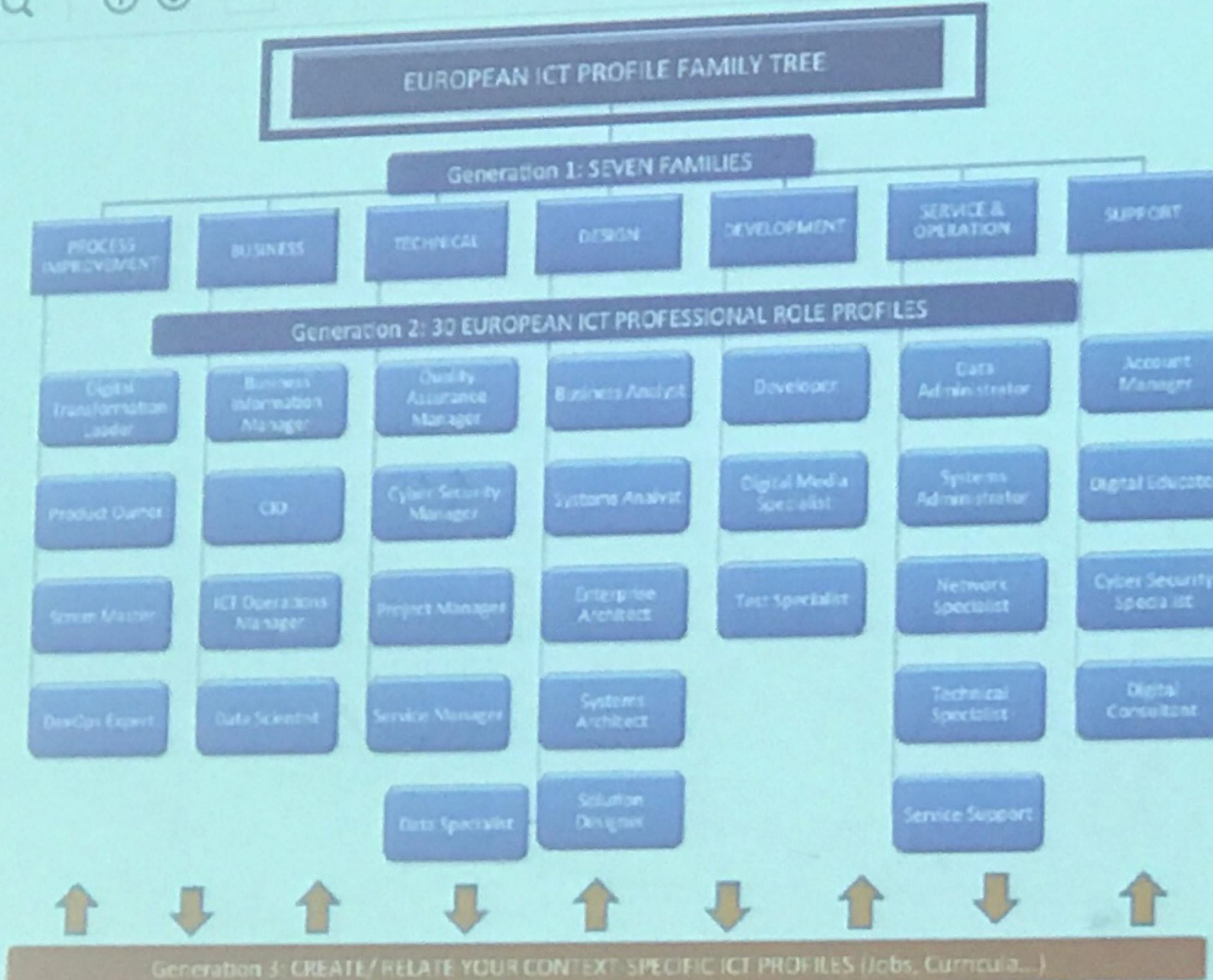
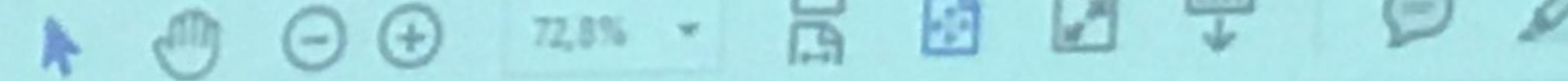


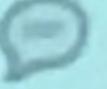
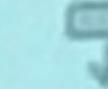
Figure 4: 30 European ICT Professional Role Profiles (generation 2) in seven families (generation 1) at the top of the European ICT Profile Family Tree



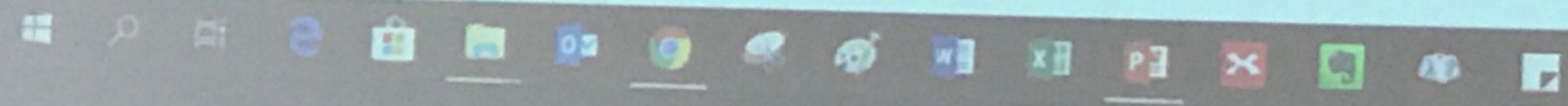
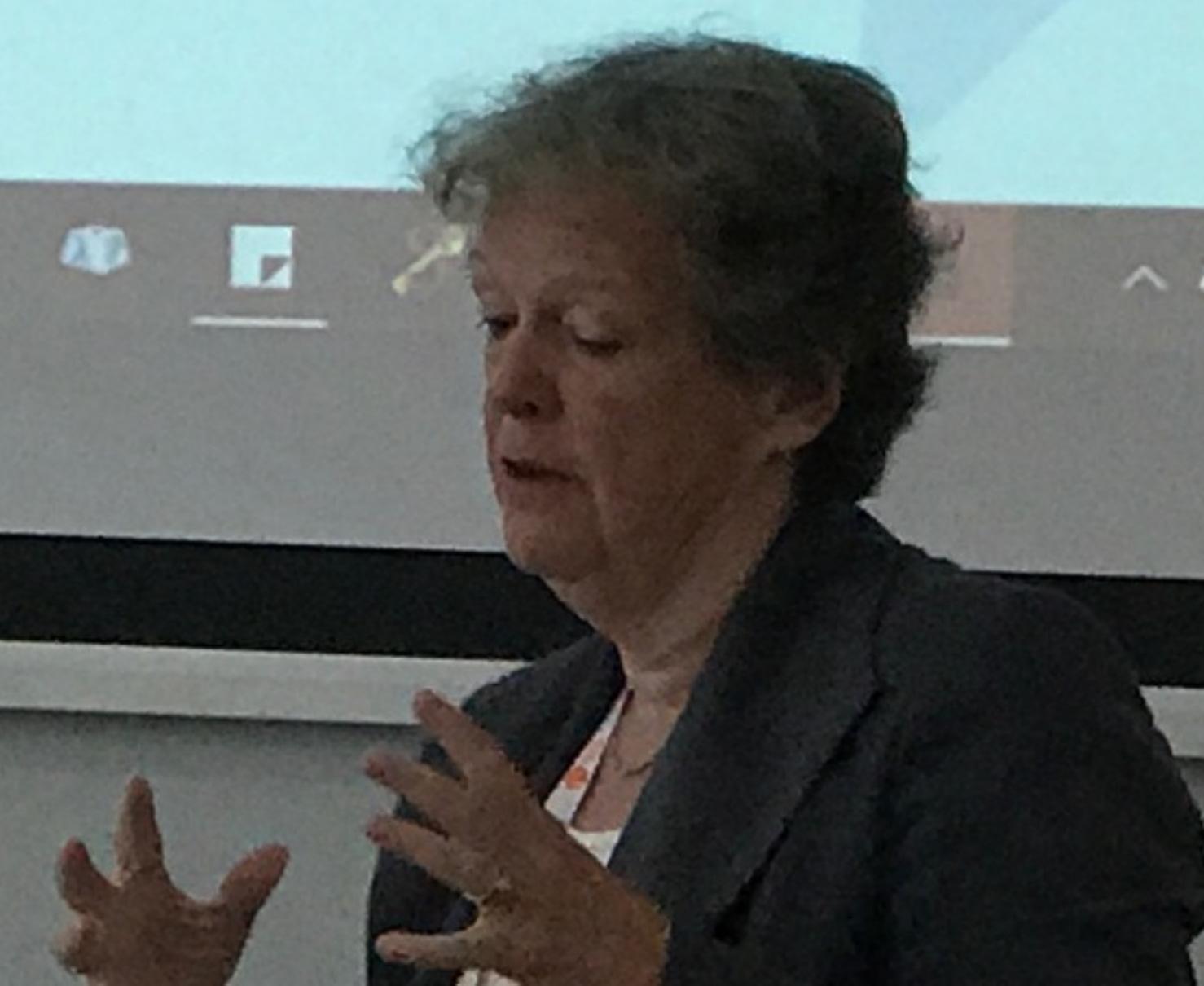
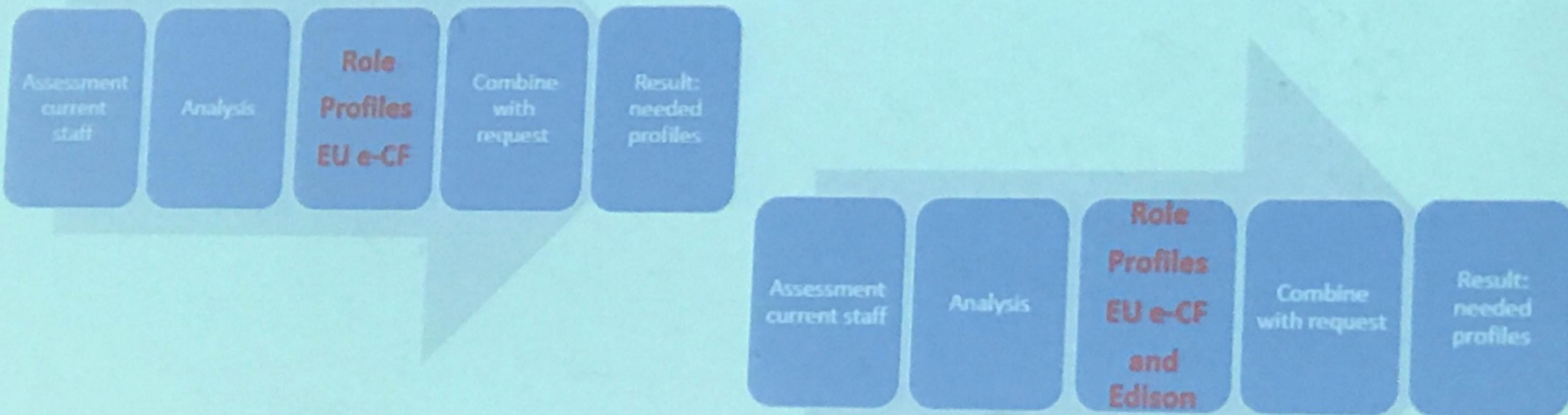
37 / 38



72,8%



## STARTING POINT: WE NEED DATASCIENCE PEOPLE:



Review View Help OFFICE REMOTE Soda PDF Creator KOMI SYSTEMS

Find Replace Select Editing Voice Pickit Images Pickit

Paragraph

Drawing

Shape Fill Shape Outline Shape Effects

Arrange Quick Styles

12 + 11 + 10 + 9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1 + 0 + 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 + 11 + 12 +

IP Professional Practice Partnering Partnering for Trust in Digital

ifip

Partnership

Skills & Knowledge

Services

Trust

Accountability

Ethics

Proud of Profession

Assess, certify and maintain professional standards

[www.ipthree.org](http://www.ipthree.org)

Notes

10:59 21 Sep 2018

ENG

in 27

x