Workshop IT Star 2016

IT Security Professional
Positioning and Monitoring:
e-CFplus support

Roberto Bellini
AICA-Milan
October, 28th 2016
agenda

1. e-CF standard and the enriched e-Cfplus System
2. IT Security Profiles, enriched version
3. Professional Positioning and Qualification
Norms and Institutions for certification’s governance

Recent changes in the Italian Norms system
- Lex
  - DL.4/13, recognize new Associations, for instance those of ICT Specialists
  - Lex 13/13 established the National Certification System

- Standardization
  - Italy: UNI published the Norm 11506 in September 2013 based on e-CF
  - Europe: CEN published the Norm EN 16234, as valid for all European Countries

Italian Institutions involved in certifications
- ACCREDIA, recognize Certification Bodies
- MISE: Ministry of Economic Development, Association Register
- Professional Associations
- Enterprise Associations, launched the Digital Competencies Observatory
Framework underpinning methodology

- Based on a shared understanding of competence

**Competence:** a demonstrated ability to apply knowledge, skills and attitudes for achieving observable results

- 5 e-Competence levels related to the European Qualifications Framework (EQF)

<table>
<thead>
<tr>
<th>e-CF Level</th>
<th>related to EQF Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-5</td>
<td>8</td>
</tr>
<tr>
<td>e-4</td>
<td>7</td>
</tr>
<tr>
<td>e-3</td>
<td>6</td>
</tr>
<tr>
<td>e-2</td>
<td>4 and 5</td>
</tr>
<tr>
<td>e-1</td>
<td>3</td>
</tr>
</tbody>
</table>

- Framework structured in 4 dimensions:

  Dimension 1: 5 e-CF areas
  Dimension 2: 40 competencies
  Dimension 3: 5 e-CF levels
  Dimension 4: knowledge & skills examples
e-CF 3.0 characteristics

- e-CF is a public framework
- Is supported by EC (CEN)
- Quality assured
- Neutrality assured
### E. Manage

**E.8. Information Security Management**

Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.

<table>
<thead>
<tr>
<th>Dimension 3</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-Competence proficiency levels (on e-CF levels e-1 to e-5, related to EQF levels 3 to 8)</td>
<td>—</td>
<td>Systematically scans the environment to identify and define vulnerabilities and threats. Records and escalates non-compliance.</td>
<td>Evaluates security management measures and indicators and decides if compliant to information security policy. Investigates and instigates remedial measures to address any security breaches.</td>
<td>Provides leadership for the integrity, confidentiality and availability of data stored on information systems and complies with all legal requirements.</td>
<td>—</td>
</tr>
</tbody>
</table>

### Dimension 4

**Knowledge examples**

- Knows/ Aware of/ Familiar with:
  - K1 the organisations security management policy and its implications for engagement with customers, suppliers and subcontractors
  - K2 the best practices and standards in information security management
  - K3 the critical risks for information security management
  - K4 the IS internal audit approach

**Skills examples**

- Able to:
  - S1 document the information security management policy, linking it to business strategy
  - S2 analyse the company critical assets and identify weaknesses and vulnerability to intrusion or attack
  - S3 establish a risk management plan to feed and produce preventative action plans
  - S4 perform security audits
A shared European language to close the e-Skills gap

- ICT demand
- ICT supply
- multinationals
- SME’s
- educational institutions
- higher education
- private certification providers
- professional associations
- social partners
- individuals

Multi-stakeholder user community from all kind of market perspectives

- Higher Education Curricula
- National frameworks
- Job posting & Recruitment
- Skills gap analysis
- ICT Professional CV
- Self promotion

Market scenarios
- Certification programs
- HR planning
- Make or buy policies
- Competence assessment
- Individual training plans

- Use e-CF content
- Create e-CF links

e-CF use by the ICT sector

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ICT demand
ICT supply
multinationals
SME’s
educational institutions
higher education
private certification providers
professional associations
social partners
individuals
agenda

1. e-CF standard and the enriched e-Cfplus System
2. IT Security Profiles, enriched version
3. Professional Positioning and Qualification
On the basis of what is offered by the public skills framework e-CF and based on the EUCIP experience, AICA has built

- An enriched professional system, with a higher granularity
- Operational tools for managing skills and profiles of ICT specialists
- The qualification and certification paths
e-CFplus System

Objectives
Specify an ICT enriched competence and profiles portfolio to satisfy following requirements

- Compliancy with Italian Technical UNI Norm 11506 and EN 16234 on e-CF and associated European Professional Profiles
- Sustain the convergences of schools and universities towards a competence and profile system accomplishing ICT discipline and labour market requirements (eCF compliant with EQF)
- Allow to implement and deploy services to manage those competencies and profiles including their certification
**e-CFplus characteristics**

e-CFplus adds the value of detailed and structured knowledge and operational skills, provides well known methods and web tools to manage the assets of business skills in a simple and effective way. e-CFplus can also adapt and customize the entire system to the specific characteristics of the organization.

e-CFplus enriches the 40 e-CF skills with more than 2,200 building blocks grouped into 157 homogeneous sets of knowledge items and skills; these elementary components enrich the 23 CEN profiles, that can be defined by each organization, with the possible methodological support of AICA.

**e-CFplus can be used in any organization**

e-CFplus helps professionals understand their position in an organization, see where they can grow, and what they need to advance in their careers.

For organizations, e-CFplus helps ICT managers and Human Resources to identify and clearly define the professional development of their employees, and to plan effective training and development activities.
**Profile title** | ICT SECURITY SPECIALIST (12)
---|---
**Summary Statement** | Ensures the implementation of the organization's security policy.
**Mission** | Proposes and implements necessary security updates. Advises, supports, informs, and provides training and security awareness. Takes direct action on all or part of a network or system. Is recognized as the ICT technical security expert by peers.

<table>
<thead>
<tr>
<th>Deliverables</th>
<th>Accountable</th>
<th>Responsible</th>
<th>Contributor</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Knowledge or Information base (Security)</td>
<td>• New technology integration proposal (Security)</td>
<td>• Risk Management policy</td>
<td>• Risk Management Plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Information security policy</td>
</tr>
</tbody>
</table>

**Main task/s**
- Ensure security and appropriate use of ICT resources
- Evaluate risks, threats, and consequences
- Provide security training and education
- Provide technical validation of security tools
- Contribute to definition of security standards
- Audit security vulnerability
- Monitor security developments to ensure data and physical security of the ICT resources

**e-competences (e-CF)**
- C.2 Change Support | Level 3
- C.3 Service Delivery | Level 3
- D.9 Personnel Development | Level 3
- D.10. Information and Knowledge Management | Level 3
- E.8 Information Security Management | Level 3-4

**Sets of skills/knowledge (e-CFplus)**
- C.2.: ICT Change Management
- C.3.: Service Delivery Management
- D.9.: Professional Development
- D.10.: Information and Knowledge Analysis

**KPI area** | Security measures in place
<table>
<thead>
<tr>
<th>Profile title</th>
<th>ICT SECURITY MANAGER (11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary Statement</td>
<td>Manages the Information System security policy.</td>
</tr>
<tr>
<td>Mission</td>
<td>Defines the Information System security policy. Manages security deployment across all Information Systems. Ensures the provision of information availability. Recognized as the ICT security policy expert by internal and external stakeholders.</td>
</tr>
<tr>
<td>Deliverables</td>
<td>Accountable</td>
</tr>
<tr>
<td></td>
<td>• Information security policy</td>
</tr>
<tr>
<td></td>
<td>• Information security strategy</td>
</tr>
<tr>
<td>Main task/s</td>
<td>• Define and implement procedures linked to IS security</td>
</tr>
<tr>
<td></td>
<td>• Inform and raise awareness among general management</td>
</tr>
<tr>
<td>e-competences (e-CF)</td>
<td>A.7. Technology Trend Monitoring</td>
</tr>
<tr>
<td></td>
<td>D.1. Information Security Strategy Development</td>
</tr>
<tr>
<td></td>
<td>E.3. Risk Management</td>
</tr>
<tr>
<td></td>
<td>E.8. Information Security Management</td>
</tr>
<tr>
<td></td>
<td>E.9. IS Governance</td>
</tr>
<tr>
<td>Sets of skills/knowledge (e-CFplus)</td>
<td>A.7.: Technology Watching</td>
</tr>
<tr>
<td></td>
<td>E.3.: ICT Risk Policy</td>
</tr>
<tr>
<td></td>
<td>E.8.: Information Security System Management, Data Protection Management</td>
</tr>
<tr>
<td></td>
<td>E.9.: IS Governance</td>
</tr>
<tr>
<td>KPI area</td>
<td>Security Policy effectiveness</td>
</tr>
</tbody>
</table>
e-CFplus provides well known methods and web tools to manage the assessment of assets, in terms of possessed individual and business skills; to be managed in a simple and effective way, allowing you to adapt and customize the entire system to each specific organization.

The main web tools provided to professionals and companies are the e-Competence Benchmark and e-Competence Management.

**e-Competence Management** is a system designed for enterprise use that provides a vision that is analytical and concise, accurate and customizable of the individual and organization skills; in particular it provides:

- standard individual reports;
- customized reports for individuals, departments, organizations, professional families,…;
- integration with leading systems of human resources management (SAP, Oracle, etc.);
- analysis of individual and organizational gaps related to the 23 CEN profiles, the 21 EUCIP profiles, and the profiles and functions defined by the organization;
- personalization of the standard skills model (elimination of irrelevant skills, for the company; adding specific business/sector expertise, …)
- methodological and operational support.
6 e-CFplus profiles families to be managed in the ICT professional system proposed by AICA

- **MANAGE-business management**
  - Business information manager +
  - Chief Information Officer +
  - ICT operation manager +

- **PLAN-design**
  - Business analyst +
  - Systema analyst +
  - Enterprise architect +
  - System architect +

- **RUN-service&operations**
  - Data Base administrator +
  - Service desk agent +
  - System administrator +
  - Network specialist +
  - Technical specialist +

- **BUILD-development**
  - Developer +
  - Digital media specialist +
  - Test specialist +

- **ENABLE-support**
  - ICT Consultant +
  - Account Manager +
  - ICT Trainer +
  - ICT Security specialist +

- **MANAGE-technical management**
  - Quality assurance manager +
  - ICT Security manager +
  - ICT Project manager +
  - Service manager +
agenda

1. e-CF standard and the enriched e-Cfplus System
2. IT Security Profiles, enriched version
3. Professional Positioning and Qualification
Professional path: positioning and monitoring

Target: professionals, managers and ICT entrepreneurs, individually

Objectives and results to specialists in the target: set up and find answers to questions

- What is the content of my work recognized today by the Italian labor market
- What would be my career guidance including consideration of employability in the Italian and European market
- How to get help to monitor the progress of the professional career and to gather information for the technical updating and systematic re-positioning in the labor market
The Professional monitoring & positioning path

ICT Specialists would be positioned in respect of 6 professional families:
- Business manager
- Technical manager
- Plan-design
- Build-development
- Run-service & operations
- Enable - support

1. registration/ objectives
2. skill inventory, competencies & gaps
3. Proximity profile, level and positioning
4. target profile & development
5. validation and measure through assessment e- CF based
6. Qualification
7. Certification and register
8. Repository and Forum
9. Personal value
10. Focused Training plan

Qualified Training supplier
**The questionnaire**

To complete the questionnaire, please indicate if you currently have or not the competence, regardless of how you acquired the competence and without taking into account what is required by your current role or any job profile to which you aspire.

**Evaluation Criteria:**
- **Yes** = application of the competence through direct experience that is still relevant (i.e. time necessary to resume experience is less than 1 month)
- **No** = no application of the competence or its application is not relevant any more

Once you have answered all questions, click the "Save" button followed by "View personal results" button.

### A-Plan

<table>
<thead>
<tr>
<th>A.1. IS and Business Strategy Alignment</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipates long term business requirements, influences improvement of organisational process efficiency and effectiveness. Determines the IS model and the enterprise architecture in line with the organisation’s policy and ensures a secure environment. Makes strategic IS policy decisions for the enterprise, including sourcing strategies.</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Business Analysis and Modelling, ICT Strategic Planning, ICT Strategic Choices</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A.2. Service Level Management</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defines, validates and makes applicable service level agreements (SLAs) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of stakeholders and business.</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A.3. Business Plan Development</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addresses the design and structure of a business or product plan including the identification of alternative approaches as well as return on investment propositions. Considers the possible and applicable sourcing models. Presents cost benefit analysis and reasoned arguments in support of the selected strategy. Ensures compliance with business and technology strategies. Communicates and sells business plan to relevant stakeholders and addresses political, financial, and organisational interests.</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Business Case Analysis, Business Plan Economics, Business Plan Communication</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A.4. Product / Service Planning</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyses and defines current and target status. Estimates cost effectiveness, points of risk, opportunities, strengths and weaknesses, with a critical approach. Creates structured plans; establishes time scales and milestones, ensuring optimisation of activities and resources. Manages change requests. Defines delivery quantity and provides an overview of additional documentation requirements. Specifies correct handing of products, including legal issues, in accordance with current regulations.</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A.5. Architecture Design</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the IS architecture. Identifies change requirements and the components involved: hardware, software, applications, processes, information and technology platform. Takes into account interoperability, scalability, usability and security. Maintains alignment between business evolution and technology developments.</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Systems Architecture Definition, Enterprise Applications Architecture, Industrial Automation Architecture, Distributed Computing Architecture</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Assessment Tool – Questionnaire on Proficiency levels

A.1. IS and Business Strategy Alignment
Anticipates long term business requirements, influences improvement of organisational process efficiency and effectiveness. Determines the IS model and the enterprise architecture in line with the organisation’s policy and ensures a secure environment. Makes strategic IS policy decisions for the enterprise, including sourcing strategies.

Business Analysis and Modelling, ICT Strategic Planning, ICT Strategic Choices

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Please select ALL still relevant proficiency levels (select one or more as required)

<table>
<thead>
<tr>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides leadership for the construction and implementation of long term innovative IS solutions.</td>
<td>Provides IS strategic leadership to reach consensus and commitment from the management team of the enterprise.</td>
</tr>
</tbody>
</table>

- [x] Level 4
- [x] Level 5

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A.2. Service Level Management
Defines, validates and makes applicable service level agreements (SLAs) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of stakeholders and business.

YES  NO

A.3. Business Plan Development
Addresses the design and structure of a business or product plan including the identification of alternative approaches as well as return on investment propositions. Considers the possible and applicable sourcing models. Presents cost benefit analysis and reasoned arguments in support of the selected strategy. Ensures compliance with business and technology strategies. Communicates and sells business plan to relevant stakeholders and addresses political, financial, and organisational interests.

Business Case Analysis, Business Plan Economics, Business Plan Communication

YES  NO
Personal results

The "radar" below shows you the profile closest to your declared competences (i.e. your "proximity profile").

A list of related competences is presented below the radar, showing competences to be improved and competences you have in excess of the required level for this profile.

Report for the profile “ICT TRAINER” for riccardo scquizzato

Each professional profile has different weights assigned to the technical competences needed by an ICT professional. The proximity index is calculated by considering the coverage of the declared competences with respect to the profile requirements; it does not consider competences that are held in excess of the required levels.

All the profile competences are clustered in line with the 5 main e-CF categories: PLAN, BUILD, RUN, ENABLE, MANAGE.

<table>
<thead>
<tr>
<th>View report</th>
<th>Your proximity to this profile</th>
<th>View profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT TRAINER</td>
<td>91.26%</td>
<td></td>
</tr>
<tr>
<td>PROJECT MANAGER</td>
<td>75.88%</td>
<td></td>
</tr>
<tr>
<td>CHIEF INFORMATION OFFICER (CIO)</td>
<td>53.85%</td>
<td></td>
</tr>
<tr>
<td>ICT OPERATIONS MANAGER</td>
<td>50.85%</td>
<td></td>
</tr>
<tr>
<td>ICT CONSULTANT</td>
<td>46.38%</td>
<td></td>
</tr>
<tr>
<td>QUALITY ASSURANCE MANAGER</td>
<td>40.17%</td>
<td></td>
</tr>
<tr>
<td>BUSINESS ANALYST</td>
<td>38.85%</td>
<td></td>
</tr>
<tr>
<td>DEVELOPER</td>
<td>37.49%</td>
<td></td>
</tr>
<tr>
<td>TEST SPECIALIST</td>
<td>33.72%</td>
<td></td>
</tr>
<tr>
<td>BUSINESS INFORMATION MANAGER</td>
<td>31.74%</td>
<td></td>
</tr>
<tr>
<td>DIGITAL MEDIA SPECIALIST</td>
<td>27.69%</td>
<td></td>
</tr>
<tr>
<td>ACCOUNT MANAGER</td>
<td>24.81%</td>
<td></td>
</tr>
<tr>
<td>ENTERPRISE ARCHITECT</td>
<td>23.83%</td>
<td></td>
</tr>
</tbody>
</table>
Personal results

The histogram below shows a measure of your mastery for each e-CF competence you declared to possess.

A detailed analysis is presented below the histogram, showing for each e-CF competence a measure of proficiency levels and the list of sets of knowledge and skills you do not sufficiently have.

Report for e-CF competences for Ugo Rossi

The measure of your mastery for each e-CF competence is expressed as a percentage where 100% means you have declared to “possess” all competence proficiency levels and all sets of knowledge and skills at the highest degree (competencies you declared "not to have" are not shown).

<table>
<thead>
<tr>
<th>Competence</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.1. Process Improvement</td>
<td>42.69%</td>
</tr>
<tr>
<td>E.2. Documentation Production</td>
<td>37.50%</td>
</tr>
<tr>
<td>E.4. Relationship Management</td>
<td>30.00%</td>
</tr>
<tr>
<td>E.4. Solution Deployment</td>
<td>29.18%</td>
</tr>
<tr>
<td>E.3. Application Development</td>
<td>18.51%</td>
</tr>
<tr>
<td>A.4. Product / Service Planning</td>
<td>16.67%</td>
</tr>
<tr>
<td>A.6. Application Design</td>
<td>16.21%</td>
</tr>
<tr>
<td>E.2. Project and Portfolio Management</td>
<td>14.72%</td>
</tr>
<tr>
<td>C.4. Problem Management</td>
<td>13.66%</td>
</tr>
<tr>
<td>A.2. Service Level Management</td>
<td>12.86%</td>
</tr>
<tr>
<td>E.3. Testing</td>
<td>12.73%</td>
</tr>
<tr>
<td>A.5. Architecture Design</td>
<td>12.70%</td>
</tr>
<tr>
<td>D.11. Needs Identification</td>
<td>12.66%</td>
</tr>
<tr>
<td>D.9. Personal Development</td>
<td>10.00%</td>
</tr>
<tr>
<td>B.6. Systems Engineering</td>
<td>9.00%</td>
</tr>
<tr>
<td>C.3. Service Delivery</td>
<td>7.31%</td>
</tr>
<tr>
<td>D.8. Contract Management</td>
<td>6.67%</td>
</tr>
<tr>
<td>E.7. Business Change Management</td>
<td>5.09%</td>
</tr>
<tr>
<td>C.2. Change Support</td>
<td>4.67%</td>
</tr>
</tbody>
</table>
Professional Progression into an organization

- Competences
- Proficiencies
- Inputs to Europass CV
- Support Plans for professional development

Employers Role Profiles

Practitioners self-assess against the e-CF
# The professional path of the ICT Security specialist

<table>
<thead>
<tr>
<th>Path</th>
<th>Professional level</th>
<th>IT Security Specialist profile positioning (upon e-CF)</th>
<th>Exam tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Competencies</td>
<td></td>
<td></td>
<td>ECDL IT Security (automatic exam)</td>
</tr>
<tr>
<td>Entry Qualification</td>
<td>•1: associate</td>
<td>•ICT Security Administrator</td>
<td>ITA Security module (automatic exam)</td>
</tr>
<tr>
<td>Level of professional Qualification</td>
<td>•2: professional</td>
<td>•ICT Security Specialist</td>
<td>Self Assessment (e-CM) Accredited Assessor</td>
</tr>
<tr>
<td></td>
<td>•3 senior professional</td>
<td>•ICT Security Specialist senior</td>
<td></td>
</tr>
<tr>
<td>Certification</td>
<td>•4: lead</td>
<td>•ICT Security Integrator</td>
<td>Written exam (Core) Self Assessment Real experience Portfolio Exam commission</td>
</tr>
<tr>
<td></td>
<td>•5 principal</td>
<td>•--</td>
<td></td>
</tr>
</tbody>
</table>
Requirements for Security Specialist qualification and certification

- seniority in the role of at least 36 months
- self-assessment ranking > 75%
- written exam
- oral exam with commission

Otherwise QUALIFICATION as professional for ranking between 50 and 75%
peer-to-peer monitoring of competencies evolution

Detailed Personal Report

AICA Forum for ICT Professionals
Thanks for your attention
r.bellini@aicanet.it  www.aicanet.it