WP4 - WP Certification

DELIVERABLE 4.2 – Formulate best practice processes across each business function

Final Version

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Table of Contents

1. Executive Summary

This document has been elaborated within the DIGITALJOBS project that is the Secretariat of the Grand Coalition for Digital Jobs.
The Grand Coalition for Digital Jobs is a multi-stakeholder partnership to tackle the lack of digital skills in Europe and the several hundred of thousands of unfilled ICT-related vacancies.
The Grand Coalition for Digital Jobs delivers concrete actions, which can be implemented in the short-term and have high local impact. It builds on on-going programmes and best practices that could be scaled-up. One of the 5 main targeted areas is Certification where the objective is to improve recognition of qualifications across countries by stimulating take-up of the European e-Competence Framework.

This document is articulated as follow:

- The first section explains the methodology adopted to conduct this best practice analysis.

- The report continues by mapping the e-Competence Framework to the typical HR processes found within organisations.

- The report examines the key target communities and the best communication channels through which they can be reached.

- It highlights the arguments for encouraging and supporting the take up of the e-CF, based on published case studies and other available assets.

- The report identifies best practice processes for promoting the implementation of the e-CF by European organisations.

2. Context: Work Package 4

This document is a deliverable of WP4 on Certification of the DIGITALJOBS project run by the Secretariat. The objective of WP4 is to to stimulate the promotion and take-up of the European e-Competence Framework (e-CF), its deployment within Member States as well as to facilitate the development of e-CF governance/platform bringing together industry and other stakeholders, especially those at national level. This will strengthen ICT professionalism and foster recognition of qualifications across Member States.

WP4 will provide support and guidance on the e-CF as an important mechanism to help people to understand a complex certification environment. It will compile best practice guidance for a range of stakeholders to support the improvement of training and certification opportunities for ICT practitioners to advance their careers. It will also target those interested in becoming ICT practitioners to identify areas of high demand. Through the promotion of e-CF based tools and services it will engage with industry to enable employers to improve ICT staff appraisal and recruitment processes, as well as for ICT employment agencies and staffing industry to apply the e-CF in supply and demand matching, training and recruitment processes.

This deliverable is the result of the activities conduted under Task 4.2 of WP4.

The core components of this task are firstly to

- Compile experiences and successes from stakeholders and provide best practice examples
- Identify the target communities and the best channels to reach them
- Produce business cases and supporting marketing collateral for these channels
- Produce guidelines for introduction and on-going use of selected certifications:

Pilot projects will be identified to evaluate the proposed processes and disseminate best practice guidelines and processes through the DIGITALJOBS partner channels and the Grand Coalition website.

3. Introduction

The European CIO Association is representative of industry across all sectors and covering both private and public companies. It does have a bias towards larger corporates, but member organisations do themselves include subsidiaries that may be similar in nature to the traditional definition of a small and medium sized enterprise.

In the context of task 4.2, the following model was created in order to show the interrelated components in the e-Competence Framework landscape and as a structure to facilitate the data gathering exercise:

3.1.   Processes

Several processes are relevant in the development and implementation of the e-CF. The objective of this WP4 is to identify ways to stimulate the take up of the e-CF. At the same time, it was felt important to consider the internal processes within an organisation where the e-CF is utilised. Looking at opportunities to embed the framework in everyday working practices it appeared essential to ensure its usage both within and more importantly between stakeholders. The value of a common language was clearly bought into by the members of EuroCIO.

3.2.   Stakeholders

Industry is one of the key stakeholders in the e-CF landscape, acting as both a contributor to the development of the standard and as a consumer in terms of using it for a range of internal organisational processes. Providers of training programmes and development courses are another key stakeholder, representing the supply side of skills development. As part of the remit of the Secretariat of the Grand Coalition project, other initiatives with an impact on the take up and use of the e-CF were felt to be important to include, for example the GUIDE service contract (discussed later).

National governments have a vested interest in the development of the e-CF, particularly in the context of the Digital Agenda for Europe and with many potential benefits, such as a positive impact on mobility issues.

Associations of professionals was agreed to be one of the important groups to target, particularly where they provide access to a large number of like-minded organisations. EuroCIO and CIONET are good examples, providing a channel to access a large number of organisations though their CIOs member network. CEPIS is another, with a broad base of over 34 countries and a range of professionals from CIOs to entry level practitioners.

Recruitment consultants and agencies are a very important service provider to large organisations. Many are regarded as trusted partners and often appear on a preferred supplier list – only a select few reaching an acceptable standard in terms of the calibre of candidates recruited.

3.3.   Benefits

The case studies presented in this documetprovide a good initial step in articulating the benefits available for the use of the e-CF, particularly when it comes to aligning the output from training providers with the staff development and recruitment needs of business. Industry responds to a sound cost-benefit case and it was felt that additional effort in this area, to which EuroCIO is happy to contribute, would be worthwhile. Unfortunately this appears to be one of the more complex areas to quantify.

3.4.   Certifications

As one of the key areas of this exercise, an initial review was conducted of the currently available certifications where the e-CF features as a core component. Empirica has conducted a review of certifications in the area of e-Leadership and this exercise required the efforts of a team of national correspondents, so this requires a significant amount of effort to be conducted successfully. The e-Skills Landscape Service was the most valuable asset in this área. This will behis will be discussed later in this document. In terms of this activity, it was felt that a full review of certifications would not be a beneficial exercise, but that ways to assist and promote the use of tools such as the e-Skills Landscape and the CEPIS e-Competence Benchmark[1] would yield the most value.

3.5.   Challenges

Despite a compelling set of benefits available to all the stakeholders, take up of the e-CF needs to be accelerated, since many of the benefits are derived from the common language and toolsets of the framework being used by a critical mass of stakeholders. Finding opportunities to promote usage will increase the number of active users and create more opportunities to use the e-CF to better align initiatives aimed at skills development.

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[1] http://cepisecompetencebenchmark.org

4. Methodology

The input to complete task 4.2 has been gained through a combination of workshops and individual discussions to compile a consolidated view of the experiences and recommendations of the European CIO Association HR & Education Council

The following assets provided input to the exercise.

4.1.   Illustrative case studies from relevant market perspectives

http://www.ecompetences.eu/case-studies/

The following 15 case studies created with the CEN workshop on ICT Skills are published on the European e-Competence Framework website. Each case study was reviewed and discussed in the context of IT HR business processes.

Case study	Feedback from members
A) European e-Competence Framework (e-CF) in large ICT demand organizations.	This is the most relevant case study for the EuroCIO members. The challenges described resonated with the members – in many cases traditional job roles are embedded in the organisation and are the accepted tool for use in all HR related processes.
B) European e-Competence Framework (e-CF) in a Corporate / ICT supplier environment	This is of less relevance to EuroCIO, which is primarily composed of end user corporates – consumers of technology. At the same time, it was felt that knowing a vendor was using the e-CF to manage its client-facing staff would be beneficial in setting expectations about the quality of delivered products and services.
C) e-CF for SMEs – competence need analysis and a managerial dashboard	Using the e-CF as an input into business strategy was a novel concept and one that hadn't been considered. Some of our members operate in a consultancy environment and using the e-CF to design commercial services was felt to be of potential value and worthy of consideration.
D) SME competence assessment and business card creation based upon the e-CF	Not many members operate in an environment where they submit staff CVs in response to tender requests, so this case study is less relevant to this

Case study	Feedback from members
	group.
E) European e-Competence Framework (e-CF) to build SME job descriptions	Not so relevant for EuroCIO members – review with PIN SME.
F) European e-Competence Framework (e-CF) for qualification providers	This is an area of significant interest to EuroCIO, who has produced its own executive education programme. Much of this case study is picked up in the GUIDE initiative (see later).
G) European e-Competence Framework (e-CF) in a certification environment	EuroCIO are supportive of the EXIN certification mapping approach and would like to see this extended across the entire landscape of training and certifications. EuroCIO recognises the challenges in completing a comprehensive mapping exercise, but sees value in a top level analysis that provides guidance in this complex area.
H) European e-Competence Framework (e-CF) for ICT professional self-assessment	The e-CF can certainly be used as a tool by the ICT professional to plan out their career path and identify competences that need development. It was felt that at the moment the next step of using that plan to (a) identify suitable training and development programmes and (b) to identify jobs that would be suitable next steps is still in an early stage of development.
I) European e-Competence Framework (e-CF) for linking e-curricula supply and demand	It was felt that this case study is very aligned with case study (H) and that the same issues applied.
K) European e-Competence Framework (e-CF)for ICT professional associations	All felt that encouraging professional associations to use the e-CF in their assessment criteria was a good thing, but that it would be a challenge getting them to undertake the exercise without any tangible benefits for them. For example, the ISACA certified information security manager is a respected qualification (and has already been mapped to the e-CF) but would they consider accepting an e-CF based competence assessment as part of their entry criteria.
L) European e-Competence Framework (e-CF) for ICT training quality improvement	All felt that this was one of the more exciting areas for the implementation of the e-CF. Innovation and digital markets is recognised by all the members as a growing opportunity for all organisations and if the e-CF can help identify key competences (and

Case study	Feedback from members
	indeed job roles and business opportunities) then this would be a powerful selling point.
M) European e-Competence Framework (e-CF) for assessment and career tools	This is one of the key areas where companies can support the take up of the e-CF, by embedding it in their normal everyday working practices (see the section on HR process mapping).
N) e-CF for European and National policy makers	This was felt to be a positive initiative – any activity that promotes the development of skills at both a national and European level will benefit organisations that have the challenge of talent recruitment and retention, a challenge that is only going to increase over time.
O) Using e-CF to integrate or relate to other frameworks	EuroCIO partner with the various national CIO bodies, so the example of CIGREF was particularly relevant. The VOICE-EV CIO network is supportive of the mapping to the German Advanced IT Training System.
P) e-CF for European ICT Professional Profiles creation	The European CIO Association and its members remain committed to the ongoing development of the e-CF and in particular the expansion of job roles. The Dutch CIO Forum has already identified additional IT security roles which would benefit from close integration with the e-CF before further dissemination.

4.2.   CEPIS e-Competence Benchmark

Looking at the the e-CF, the most widely used tool is the CEPIS e-competence benchmark[2], a free, online interactive tool that enables current and future ICT professionals to identify the competences they need for various ICT roles and career paths. With over 4,000 professionals throughout 24 European countries having completed their benchmarks this is currently the most prevalent example of the e-CF and the e-jobs profiles in action.

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[2] http://cepisecompetencebenchmark.org

4.3.   Comparing e-Skills related Certificates

http://www.eskillslandscape.eu/certification-profiles-2/

The e-Skills Landscape Service was a new concept to many of the members, which reflects that the service would benefit from additional marketing and promotional activity.

The Certificate Profiles section, matching e-Skills related certificates to ICT profiles and associated competencies was agreed to be a very valuable tool.

The main issue raised was how will this be maintained going forward? There are a large number of technical and management programmes that should be included – who has responsibility for updating this service? Will this be a self-assessment exercise of will there be an independent quality assurance or assessment process?

The Appendix B of this document was produced by EuroCIO based on the material available in the e-Skills Landscape. It was an attempt to map certifications to required skills levels for the European ICT Professional Profiles. The exercise was felt to be useful but was not intended as a replacement or even an addition to the existing tool

One useful output from the exercise was thinking about career management and planning from the perspective of the individual.

There are several stages at which an individual undergoes training and development within his career, particularly in those industries / sectors / professions where continuous professional development is the norm.

Early career.

Many of the Secretariat of the Grand Coalition initiatives are starting back at school, but for the purposes of this exercise the start point was taken as graduate level. Again this reflects the nature of the European CIO Association, which is mainly concerned with employees from this point onwards.

Technical training is most important here, and the e-CF is a good mechanism for identifying programmes to meet the requirements of a staff training needs analysis.

Masters programmes are felt to be most useful once the candidate has a few years of work experience under his / her belt.

Mid career.

This is the period when management and leadership programmes start to become more important than technical training courses.   In a continuous professional development environment, many certifications require ongoing updates to maintain the validity of the certification. Programmes and course are primarily funded by the employer.

Late career / career changes.

There can be many reasons for a career change, some planned and some unplanned, for example redundancy. This can be a trigger for the acquisition of new skills and may also be a financially unsupported activity, relying on personal sources of funding. In this instance, affordable online courses (or supported by government grants for the unemployed) are likely to be the most appropriate delivery mechanism.

4.4.　　European e-competence Framework Profile tool

http://profiletool.ecompetences.eu/

This was generally recognised as a very valuable asset and again one that wasn't familiar to all the members. The filter options work well and make it very easy to focus on a particular ICT profile, categorised across all the dimensions
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4.5.　　Self-assessment tool

http://www.eskillslandscape.eu/self-assessment/

The self-assessment tool was felt to be a very useful device for the individual, less so for the organisation. For individuals managing their own career this is useful for planning the next career move to a new organisation – not a process generally undertaken by employers.

4.6.　　CEN Workshop Agreement 16458 – European ICT Professional Profiles

The description of job roles is a key element of staff management in all our member organisations, but there is a wide variety of standards in place, many of which have not changed in several years.

The case studies do give examples of companies that have moved to the e-CF as a company standard (for example, the Euro Disney example in case study A, referenced in section 3.6 above, but this was felt to be an exercise that would require significant effort and require the input of many stakeholders within the organisation. Salary scales are linked to job roles and a myriad of job titles have evolved over time.

Whilst all saw the value in completing this exercise, many would not see it as a priority compared to other projects with a more compelling cost benefit case.

So saying, this project can continue to identify processes, mechanisms and tools, guidelines and best practices that could facilitate this migration.

4.7.　　CEN Workshop Agreement 16367 – Implementing e-Competence Framework into SMEs

This was reviewed but is one of the areas where a partner more experienced in SME practices could add more value.

4.8. Other assets evaluated

The e-Competence Framework brochure:

http://www.ecompetences.eu/wp-content/uploads/2014/02/European-e-Competence-Framework-3.0_CEN_CWA_16234-1_2014.pdf

This is the best document for providing background, context and the core components of the framework. It gives a thorough description of the framework, along with its founding principles and rationale.

5. Mapping the e-CF to HR Processes

EuroCIO agreed a standard set of HR processes. There is no defined model of standards[3] so the following processes were used for the purpose of the task.

HR process	Proposed channels
Recruitment	The e-CF can be positioned as a core element of the job description. Recruitment companies often have a set format for the job role and work to time pressure – they may not be incentivised to make material changes to their standard job advertisements. Industry will have to take the lead and request that e-CF competences feature in the job description template. In the planning of the recruitment process, the e-CF should be used to determine the competences needed in the ideal job holder.
Objective setting	Objectives are traditionally set using the SMART framework: • Specific • Measurable • Agreed • Realistic but challenging • Time bound It was not felt the e-CF could make a significant contribution to this process.
Training plan development	Generally conducted on an annual basis, the e-CF can be used to review the level of competence currently demonstrated by the individual and to identify those areas that need development and training.
Appraisals and performance management	This was felt to be a less important area for e-CF support.
Succession planning	A recognised critical success factor in both corporate performance and risk management is to have adequate plans in place to cover for any loss of the executive management team – a requirement now captured in corporate governance and compliance requirements.

[3] The Society for Human Resource Management and the Chartered Institute of Personnel and Development were consulted in this regard.

HR process	Proposed channels
	It was felt that competencies should feature significantly in determining required skills and this this area should be explored in a case study.
Job sharing	This is proving to be a more common occurrence, particularly with workers that are only available on a part time basis. It was felt to be a simplified example, but if between them the individuals can demonstrate the required level of competences required for optimum job performance, then operational risks should be minimised.

5.1.   Other processes

Corporate acquisitions

Many companies are on the merger and acquisition trail in addition to organic growth. Accepted wisdom about why mergers and acquisitions fail to deliver business benefits often highlights that inadequate planning was invested in how to merge the organisation processes in advance of the merger taking place.

The merging of human capital in these situations is a key contributor to success. A variety of factors are featured in the decision making process about what the new organisation should look like. One of the expected outcomes is that costs can be saved based on economy of scale factors, so unless the new companies are expected to operate independently, there is an expectation that some job losses will eventually occur. At the same time there may be a desire to invest in a particular area, so regardless of a net negative result, there can be regional recruitment exercises needed.

In shaping how the new organisation looks, it was felt that the e-CF would be a useful tool for mapping competences onto the new organisational structure.

The following questions would benefit from a structured approach.

* What locations will now be the centres of excellence for particular functions?
* What are the core roles needed at each location and what skills will be needed?
* If we map (in principle) current job holders to these roles, what does the resulting gap analysis look like?
* Can we use a competency based framework in the recruitment exercise to fill the skills gap?

This of course has implications for mobility – both internally and external to the organisations.

6. Target communities

In terms of determining the best channels through which to deliver material to the target communities, a review was held of example stakeholders with whom the network members had personal experience and could propose the optimum approach.

The findings and recommendations are summarised in the following table.

Target community	Examples	Proposed channels
Professional Associations	British Computer Society	Professional associations tend to have a variety of channels for engaging with their members – often a website or portal, potentially with access to content such as whitepapers and possibly a newsletter. Approach: The professional association managers assume (correctly) a gatekeeper role for their members. In the first instance, they need to be convinced of the value of a product or service to their members. A compelling proposition, clearly articulated from the member perspective is ideal – another opportunity for the case studies. In addition, professional associations tend to have special interest groups – these should be targeted and encouraged to become advocates and ambassadors for the e-CF framework.
Training providers	CompTIA ISACA (ISC)[2]	The training providers are commercial enterprises with a need to market and sell their products and services. Anything that helps further this process should be well received. Approach: If the consuming organisations rely on the e-CF for their decision making processes, this should be a relatively straightforward proposition. The current marketing collateral is felt to be of sufficient quality to facilitate a dialogue between the providers and end user organisations.

Target community	Examples	Proposed channels
Networks	European CIO Association CIONet	One of the primary objectives of network associations is to create opportunities for the members to get together and share best practice.
		There is generally a management team that has responsibility for co-ordinating events and also for the dissemination processes (newsletters / website).
		Approach:
		Digital content that can be made readily available can easily be incorporated in websites. The benefits can be summarised and with the support of the network co-ordinators, incorporated in portals (this could be a simple link).
		The key element is the message, which needs to be compelling and short and worthy of endorsement by the network co-ordinators.
		Networks by definition are built on trust – the most powerful vehicle will be case studies derived from the network members.
		Opportunities for strong supporters to present at network meetings offer a powerful message delivery format.
Recruitment consultants	(some European players but primarily regional in nature)	As discussed previously, it is essential to win over this group in seeing the benefits of the e-CF in their candidate selection processes.
		Approach:
		Whilst driving this from the recruiting company perspective is the obvious option, a marketing campaign targeting recruitment companies, or better yet associations of recruitment consultants was felt to be a worthwhile exercise.
		Again, the current material should suffice.

7. Best practice processes to stimulate the take up of e-CF based / mapped certifications

7.1. Development of cost benefit cases to support the existing case studies

The existing case studies are a very good reference (see analysis) but need more in the way of supporting arguments to around the business case. If possible, the pilot exercises to be conducted in the next stage of this project should be used to gather additional data that can be used to formulate these business cases.

7.2. Production of content for inclusion in dissemination channels

This will clearly need to be customised according to the audience, but there is much in the way of existing marketing and support material that can be used in its raw state.

In many cases, this can be 'topped and tailed' according to the method of distribution and intended recipients. It has already been stated that the case studies are a very effective method for creating a compelling argument, particularly when articulated by a trusted peer organisation.

7.3. Incorporation in internal IT HR processes

As discussed, commercial enterprises of all sizes can lead the way in ensuring that the e-CF becomes embedded in everyday working practices. This will facilitate discussions between all the stakeholders, building on the theme of a common language and vocabulary.

7.4. Develop additional ICT role profiles

For example, the Dutch CIO Forum has expanded on the Chief Information Security Officer role. These can then be mapped to the e-CF to create a larger body of roles for use within organisations.

7.5. Fully populate the e-Skills Landscape

This is an excellent tool but there are many more courses that need to be mapped and included. For example, one of the most popular and recognised IT security certifications is the ISACA Certified Information Systems Security Professional which does not appear on the current list.

The ongoing maintenance of the landscape, coupled with the self-assessment versus accreditation argument remains to be clarified, as does ownership. The EC is making this tool available to anyone who wants to use the software on a non-commercial basis.

7.6. Encourage recruitment agencies to incorporate the e-CF in job advertisements

As another major stakeholder, the support of this group will help to foster the use of the e-CF in discussions around recruitment. As industry starts to make more use of the e-CF to define internal profiles and for resource planning purposes, it will make sense to extend that method out to the third party organisations that support talent selection and recruitment.

7.7. *Increase visibility at European level*

The GUIDE regional cluster events are showcasing the e-CF at 10 events throughout Europe, drawing attendees from a wide variety of backgrounds. The Secretariat of the Grand Coalition will generate many such events and opportunities should be pursued where success stories can be promoted.

7.8. *Exploit vocational training channels*

In particular, those channels which are aimed at the individual. Many of the channels identified so far are aimed at groups – like-minded individuals brought together by a common cause.

7.9. *Identify brand advocates and ambassadors*

These should be identified at both national and European level.

For example, e-Skills UK are a vocal promoter of the e-CF in their territory.

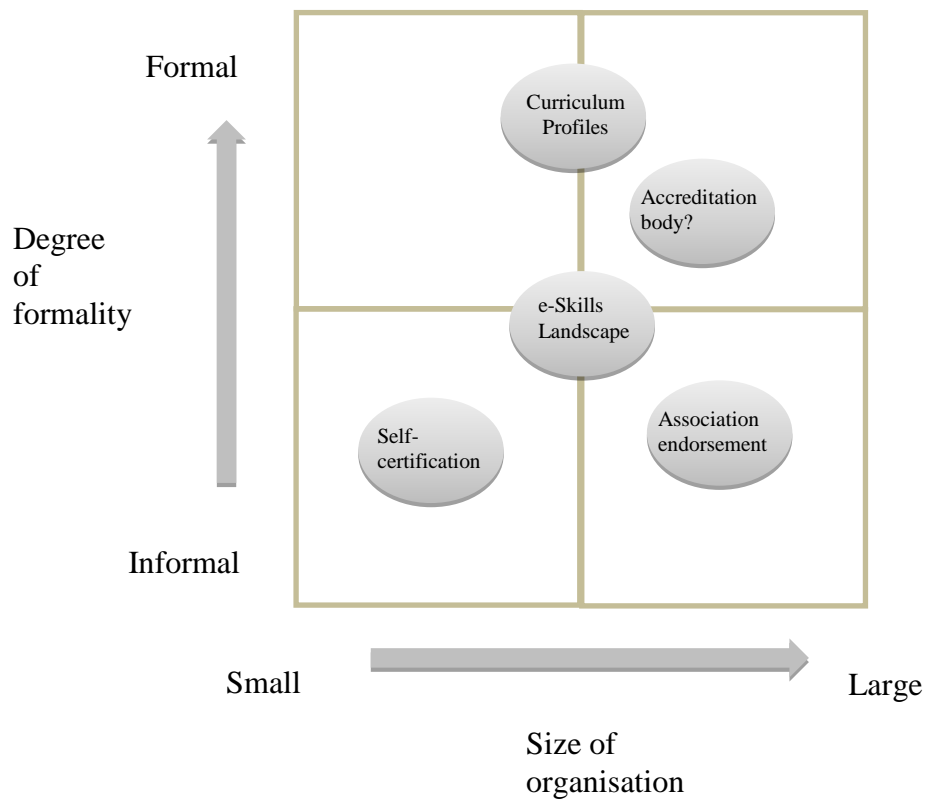## 7.10. *Promote curriculum profiles*

Curriculum profiles are one of the primary deliverables from the GUIDE initiative, and they represent a good vehicle for promoting the e-CF.

Designed around ICT role profiles, they use the e-CF as a core component to match academic programmes to industry demand for skills.

Originally targeted at e-Leadership programmes, these should now be expanded to the full range of ICT job profiles and mapped to suitable training programmes and courses.

Cost benefit case development	• Financial figures to suppot the case studies
Content development	• Additional material for dissemination
Inclusion in internal ICT HR processes	• Embed in everyday working practices
Develop additional ICT role profiles	• Add to the current 25 role profiles over time
Populate fully the e-Skills Landscape	• Find a light-touch way to incorporate addition courses
Promote recruitment agency usage	• Create job descriptions where the e-CF features
Increase visibility at European level	• Exploit conference opportunities - best practice examples
Vocational training channels	• Identify channels aimed at individuals
Identify brand advocates	• Ambassadors for the e-CF - national / European level
Promote curriculum profiles	• Utilise existing profiles nd support development of others

7.11.   Positioning of e-CF based certifications

Formal

Degree
of
formality

Curriculum
Profiles

Accreditation
body?

e-Skills
Landscape

Self-
certification

Association
endorsement

Informal

Small   Large

Size of
organisation

EuroCIO decided where best to position e-CF related certifications, to capture the ease of implementation.   Self-certification schemes are relatively straightforward, but then may not have sufficient credibility for universal adoption because they do not have an accreditation step.

Accreditation can be by a formal body (e.g. ASIIN) or by a respected authority (discussions are being held with EuroCIO about them assuming an endorsement role for curriculum profile mappings, plus the British Computer Society have an accredited award scheme).

The e-Skills Landscape could operate in this regard, depending on the formality of certification.

8. Mapping of communication channels to key company roles

These are the internal target communities that also need to be targeted with marketing materials to ensure the e-CF becomes embedded in standard working practices. In the case of corporates, the support of these individuals is a critical success factor.

Role	Responsibility	
Chief Information Officer	Responsible for the IT strategy for the organisation	The best route to these individuals is the CIO networks- EuroCIO and CIONet.

Presentations at network meetings, inclusion on member websites and portals and coverage in newsletters are the recommended approach.

Championing by special interest groups is also powerful. |
| HR Director | Responsible for the HR strategy for the organisation | In this instance, it is critical to understand the goals and objectives of the HR function in the current business plan, so that no conflicting messages are introduced.

Business strategy is shaped by external factors, so if the current business plan calls for cost reduction, then different arguments are needed to promote e-CF usage. Support for organisational re-design will be most compelling in this instance.

HR will most likely have responsibility for overall corporate HR processes, so how best to incorporate the e-CF will need to be reviewed with this function.

As stated previously, there is likely to be a legacy of traditional HR processes designed around the ubiquitous job description.

At the same time, the transition to a competency based approach has been successful in many organisations. |
| HR Relationship Manager | Responsible for the HR plans, tasks and activities within the | In larger organisations there is often a HR business partner who acts as |

Role	Responsibility	
	IT department	the liaison between the head office HR function and the IT department. Similar arguments and issues to the above apply.
Head of Service Delivery / Head of Development	Responsible for maintaining the service levels of IT operations	The CIO will have a range of direct reports – application delivery and service management being the most common. The service delivery and application development managers have a key role in that they probably have the most diverse portfolio of technically trained individuals within their respective organisations. Ensuring they buy into the benefits of using the e-CF in their resource planning activities was felt to be a critical success factor.

9. The GUIDE e-Leadership service contract

The GUIDE initiative commenced in January 2013 with the objective of developing certifications to better align academic ICT programmes with the skills development needs of industry.

The initiative includes several partners with an interest in the e-Competence Framework, including EuroCIO, CEPIS and the European e-Skills Association.

Recognising that one objective of the Secretariat of the Grand Coalition is to develop a thematic network for the dissemination of European best practice in e-CF utilisation, the key outputs from this initiative should be incorporated in this document.

Further information can be found on the Empirica website, but some of the key elements that impact the DIGITALJOBS project are summarised here.

1) The GUIDE initiative (hereafter referred to ag GUIDE) worked with the primary partners to consolidate best practice in the area of aligning academic programmes, in particular learning outcomes, with industry needs for skills development.

2) The mechanism chosen at the outset for the capture of skills was the e-Competence Framework. This forms a key component of the GUIDE deliverables.

3) The European CIO Association executive education programme was identified at industry best practice for bringing the key stakeholders together. In particular, their use of a Programme Design Board (PDB) to bring real industry experience into the development process for curriculum development was highlighted. The Programme Design Board (PDB) is constituted of representatives from industry with practical experience and representatives from the academic institutions.

4) A good example is the EuroCIO Professional Programme in Business and Enterprise Architecture. This is a pan-European programme taught across 3 business schools – Henley Business School (UK), Tias School for Business and Society (Netherlands) and Technical University Munchen (Germany).

The PDB has representatives from large organisations – real world practitioners, enterprise architects who ensure the programmes remain current and up to date.

5) The mechanism for matching programmes to skills requirements is the curriculum profile. For a particular job role, the most appropriate ICT Professional Profile is used as a start point to define skills requirements.

6) Existing programmes can be self-assessed against the respective curriculum profile to determine how well it meets the needs of the business.

Current curriculum profiles

3 curriculum profiles have been defined to date. They were identified based on the skills that EuroCIO see most in demand for their member organisations.

Curriculum profile	Target audience / typical programme
Innovation and Transformation through ICT	Aimed at CIOs Best demonstrated by appropriate MBA programmes
Business and Enterprise Architecture	Aimed at Business and Enterprise Architects

Curriculum profile	Target audience / typical programme
	Best demonstrated by the EuroCIO Professional Programme in Business and Enterprise Architecture
Information Security Governance	Aimed at Chief Information Security Officers
	Best demonstrated by appropriate e-Leadership programmes with high security e-Leadership content.

As part of GUIDE, a series of regional cluster events have been promoting curriculum profiles (and by extension the e-CF) throughout Europe, encouraging business schools and universities to self-assess their programmes for fit.

In summary, the curriculum profiles are shaping up to be a key tool for matching programmes to skills development requirements, although they are in an early stage of development.

Additional information can be found here:

http://www.eskills-guide.eu/home/

10. Challenges

In the UK, a more established skills competency framework is the Skills Framework for the Information Age (SFIA) supported by the SFIA Foundation (the Institute of Engineering and Technology, e-Skills UK, the British computer Society and the IT Service Management forum).

Whilst its goals and objectives are the same in principle, it does hamper the uptake of the e-CF in the UK marketplace.

Additional country and territory differences became apparent during the study. It would be useful to have a country breakdown in terms of e-CF uptake. The European CIO Association can provide a representative sample, although its strongest representation is in northern Europe where there are many similarities in the experiences with skills development and training.

11.   Recommendations and next steps

In order to promote the take up of the E-CF, the followed recommendations have been produced:

1) Continue to develop this document in the light of input from the other key stakeholders.

2) Identify pilot projects that can validate the findings and recommendations.

3) Expand business cases to include financial benefits, where possible.

4) Develop marketing collateral for all identified channels.

5) Create opportunities for dissemination through target channels.

Appendixes

Appendix A

Question set used to phrase the discussion aimed at producing this document.

1. Are you familiar with the European e-competence Framework?
2. Do you use it in your organisation and if so, how is it used?
3. Do you integrate it with your existing processes and procedures?
4. Are you familiar with any of the e-CF tools or supporting materials, such as the profile tool?
5. What certifications are most commonly used within your organisation?
6. How do you determine which certifications are of most value to your organisation?
7. How do you engage with external resource providers or contract agencies, recruiters and head hunters? What documents or standards are used in this process?
8. What barriers do you see to the uptake of the e-CF in your organisation

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Appendix B

Appendix B represents a work in progress exercise to map the courses from the e-Skills Landscape to the ICT role profiles
European ICT Professional Profiles
Programmes linked to career development

Provider	Basic	Intermediate	Advanced
Account Manager			
Business Analyst			
Business information Manager			
Chief Information Officer			Executive MBA
Database Administrator			
Developer	Certified Design Associate (CDA) / CISCO Certified Design Expert (CDE) / CISCO	Associate Computer Professional (ACP) / ICCP Microsoft Technology Associate (MTA) [Developer] / Microsoft	Microsoft Certified Solution Developer (MCSD) / Microsoft
Digital Media Specialist			
Enterprise Architect		TOGAF9 / Open Group EuroCIO Professional Programme in	Certified Architect (CCA) / CISCO Microsoft Certified Architect (MCA) /

Provider	Basic	Intermediate	Advanced
		Business and Enterprise Architecture	Microsoft
ICT Consultant		Cloud Essentials / CompTIA	
ICT Operations Manager		ITIL Expert / Axelos	
ICT Security Manager		COBIT Foundation / ISACA Governance of Enterprise IT (CGEIT) / ISACA	Advanced Security Practitioner (CASP) / CompTIA Certified Information Security Manager (CISM) / ISACA Certified Information Systems Auditor (CISA) / ISACA Microsoft Certified in Risk and Information Systems Control (CRISC) / Microsoft
ICT Security Specialist		Security+ / CompTIA	Advanced Security Practitioner (CASP) / CompTIA Certified Information Security Manager (CISM) / ISACA Certified Information Systems Security Professional /

Provider	Basic	Intermediate	Advanced
			ISACA
ICT Trainer	European Computer Driving License (ECDL) / ECDL Foundation		
Network Specialist	A+ / CompTIA Certified Design Associate (CDA) / CISCO Certified Design Expert (CDE) / CISCO Cisco Certified Network Associate Routing and Switching (CCNA) / CISCO Configuring Advanced Windows Server 2012 Services (70-412) / Microsoft HP ATA – Cloud / Certiport HP Institute HP ATA – Networks / Certiport HP Institute HP ATA Technology Certification / Certiport HP Institute HP ATA – Servers and Storage / Certiport HP Institute Installing and Configuring Windows Server 2012 (70-410) /	Administering Windows Server 2012 (70-411) / Microsoft Advanced Level Linux Certification (LPIC-2) / Linux Professional Institute	

Provider	Basic	Intermediate	Advanced
	Microsoft Interconnecting Cisco Networking Devices (ICND1) / CISCO Microsoft Certified Solutions Associate Windows Server 2012 (MCSA) / Microsoft Network+ / CompTIA Senior Level Linux Certification (LPIC-3) / Linux Professional Institute VMware Certified Professional - Cloud (VCP-Cloud) / VMware		
Project Manager		Advanced Level Test Manager / ISTQB Certified Architect (CCA) / CISCO PRINCE2® Foundation / Axelos TMap NEXT® Test Manager / EXIN	Microsoft Certified Architect (MCA) / Microsoft PRINCE2® Practitioner / Axelos
Quality Assurance Manager		COBIT Foundation / ISACA Governance of Enterprise IT (CGEIT) /	Certified Information Systems Auditor (CISA) / ISACA

Provider	Basic	Intermediate	Advanced
		ISACA	Microsoft Certified in Risk and Information Systems Control (CRISC) / Microsoft
Service Desk Agent	European Computer Driving License Advanced (ECDL Advanced) / ECDL HP ATA – Connected Devices / Certiport HP Institute ITIL Foundation / Axelos Microsoft Certified Solution Expert (MCSE `HW`) / Microsoft		
Service Manager	ITIL Foundation / Axelos	ITIL Expert / Axelos	
Systems Administrator	A+ / CompTIA Cisco Certified Network Associate Routing and Switching (CCNA) / CISCO Configuring Advanced Windows Server 2012 Services (70-412) / Microsoft HP ATA – Cloud / Certiport HP Institute HP ATA – Networks /	Administering Windows Server 2012 (70-411) / Microsoft HP ATA Technology Certification / Certiport HP Institute	Advanced Level Linux Certification (LPIC-2) / Linux Professional Institute

Provider	Basic	Intermediate	Advanced
	Certiport HP Institute		
	HP ATA – Connected Devices / Certiport HP Institute		
	HP ATA – Servers and Storage / Certiport HP Institute		
	Installing and Configuring Windows Server 2012 (70-410) / Microsoft		
	Interconnecting Cisco Networking Devices (ICND1) / CISCO		
	Junior Level Linux Certification (LPIC-1) / Linux Professional Institute		
	Microsoft Certified Solution Expert (MCSE `HW`) / Microsoft		
	Microsoft Certified Solutions Associate Windows Server 2012 (MCSA) / Microsoft		
	Microsoft Technology Associate (MTA) [Professional] / Microsoft		
	Security+ / CompTIA		
	Senior Level Linux Certification (LPIC-3) /		

Provider	Basic	Intermediate	Advanced
	Linux Professional Institute VMware Certified Professional - Cloud (VCP-Cloud) / VMware		
Systems Analyst	Cloud Essentials / CompTIA		
Systems Architect		Certified Architect (CCA) / CISCO HP ATA Technology Certification / Certiport HP Institute	Microsoft Certified Architect (MCA) / Microsoft
Technical Specialist	A+ / CompTIA HP ATA – Cloud / Certiport HP Institute HP ATA – Networks / Certiport HP Institute HP ATA – Connected Devices / Certiport HP Institute HP ATA – Servers and Storage / Certiport HP Institute	Microsoft Certified Master (MCM) / Microsoft Microsoft Certified Solution Developer (MCSD) / Microsoft TOGAF9 / Open Group	
Test Specialist	Certified Tester Foundation Level in Software Testing / ISTQB	Advanced Level Test Analyst / ISTQB TMap NEXT® Test Engineer / EXIN TMap NEXT® Test Manager / EXIN	Advanced Level Test Manager / ISTQB

Source: e-Skills Landscape / European CIO Association

Notes:

1) A typical comment was that not all roles can be fitted into these descriptions, which reflects non-familiarity with the framework or its intended use and ongoing development. EuroCIO will continue to work with the e-CF managing bodies so that it continues to evolve andincorporate new roles or amendments to existing roles.

2) Basic / Intermediate / Advanced refers to the level of ability required to perform the role as a trainee, competent professional and expert professional. This terminology should be amended so it fits with the vocabulary used in the e-CF and similar European standards.

3) The basic / intermediate /advanced categorisation refers to where the training should be introduced initially. It could feature in a training plan as a pre-requisite for the promotion to the next position

4) The training programmes listed are in many cases taught by multiple providers. For example, there are alternate accredited providers for Prince2 and for CRISC other than those shown.

5) The programmes taught have a bias from the supply side perspective.

6) There is a distinct lack of management and leadership programmes which need to be incorporated – develop business savvy technology leaders to drive innovation.

7) The table is based mainly on material from the e-Skills Landscape with a few additions from EUROCIO