

## SFIA – e-CF Comparison & Mapping Review

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This document reports on an exercise to map the SFIA and e-CF frameworks to establish similarities and differences and to explore future collaboration and the benefits of a possible merging of the two frameworks.

It is intended as input to future mapping and merging discussions.

This document has an associated set of mapping matrices, published separately.

## Executive Summary

This report describes the findings of a study to compare and map the two frameworks SFIA (Skills Framework for the Information age) and e-CF (European Competency Framework) and to consider bringing the two frameworks closer together.

Both frameworks have the same aim – to provide a means of characterising the skills and competencies necessary for roles within IT. Both frameworks are available in several languages with SFIA including 3 non-European languages.

SFIA has established a global user-base in almost 200 countries and is managed by the SFIA Foundation on behalf of its users. It is updated by open consultation with the users and is free of charge for non-commercial, internal use. Tools support is available from several Accredited Partners. SFIA was first published in 2000.

e-CF has established a relatively small user-base within the EU through successful pilot projects. It has been accepted as a European Standard and is being promoted for adoption throughout Europe. It is free of charge and is supported by an online tool. E-CF was first published in 2005.

This comparison and mapping has focussed on the more difficult task of ‘equivalence’ – comparison for alignment of service offerings is relatively straightforward as rigour is not required. The main points are as follows:

- The coverage of IT skills in SFIA is wider than in e-CF.
- The levels within the frameworks do not align one-to-one and there is overlap.
- Some e-CF competencies encompass more than one SFIA Skill.
- There is rarely a one-to-one mapping of skills and competencies and so information is distributed throughout the frameworks making a clear comparison very difficult.
- Both frameworks need to be interpreted for use.
- While there appears to be more detail in e-CF because of the skill and knowledge components this is not the case and these statements require great interpretation.
- Both frameworks have attributes outside of the skills or competency descriptions; the Generic Responsibilities in SFIA and the Annex Table attributes of e-CF, although the importance of this latter table is unclear.
- Both frameworks could present the information in a more useable manner.
- There is an ‘ecosystem’ surrounding SFIA which has yet to be established for e-CF.

A comparison summary of some of the areas needed to be considered is provided in Appendix A along with a reference to the comparison mapping document which provides detail at the individual skills and competencies in each framework.

There is no reason why the two frameworks should not co-exist but clearly there is a benefit to bringing the two frameworks closer together and possibly even merging into one. This appears to be relatively straightforward from a technical point of view as there is so much similarity in the two frameworks however issues of ownership, migration for key users and issues relating to a number of underlying principles would need to be resolved.

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## 1 Introduction

### 1.1 Background

BCS, The Chartered Institute for IT, commissioned this report to be a comparison review of both SFIA and e-CF for input into a proposed mapping workshop. It provides a review of the current skills and competency landscape, a comparison of the SFIA and e-CF Frameworks and a mapping between the two.

### 1.2 Output from this Review

The deliverables from this review are:

- This report detailing the comparison of the frameworks and a mapping of both frameworks
- A presentation of findings of this review for the proposed mapping workshop

Note: While the mapping matrices could be considered a ‘stand-alone’ document, it does not have all the considerations behind it and so the mapping matrices should be read, and indeed used, in conjunction with this report as a whole.

### 1.3 Conduct of the Review and Mapping

This work was funded by BCS, The Chartered Institute for IT and conducted primarily by Ian Seward, an independent consultant; he is an experienced SFIA Accredited Consultant and the general manager of the SFIA Foundation.

This mapping exercise was carried out as a ‘desk study’ of the two frameworks using some existing mappings as input, and with input and review from experienced skills and competency expert practitioners from the global SFIA community.

### 1.4 Skills and Competency Frameworks Reviewed

The following skills and competency frameworks (and specific documents) were reviewed:

- SFIA – The Skills Framework for the Information Age
  - SFIA V6 – The Complete Reference Guide
  - SFIA V5 – in part
- European e-Competence Framework V3.0
  - European e-Competence Framework – CWA 16234:2014 Part 1
  - User Guide for the application of the e-CF 3.0 – CWA 16234:2014 Part 2
  - Building the e-CF – Methodology documentation – CWA 16234:2014 Part 3
  - Case Studies for the Application of the e-CF 3.0 – CWA 16234:2014 Part 4
  - The European Qualifications Framework EQF

## 2 Background to Collaboration

During a recent e-CF/SFIA Collaboration workshop (March 2016) a number of topics were discussed:

- e-CF expressed that the cost of the update process was considerable and wanted to know how SFIA managed this
- fees and sustainability
- growing a user base

It was decided that the possibility of collaboration should be considered and, as a first stage, a mapping of the two frameworks should be undertaken possibly to frame further collaboration activities.

## 3 Description of the Skills Framework Landscape

### 3.1 Introduction to the Skills Framework Landscape

A number of skills and competency frameworks for IT have been developed. SFIA, The Skills Framework for the Information Age and e-CF appear to be the two leaders in this area at present. While SFIA and e-CF are considered as the two leaders for the purposes of this study, other frameworks do exist. The Japanese have created the iCD Skills Framework. This is very well regarded in Japan but has little or no reach outside of Japan and those Japanese companies using iCD continually ask 'how iCD relates to SFIA', in effect validating it in the global community.

SFIA has established itself as the de facto global IT Skills and Competency Framework; it has global reach with users in almost 200 countries. While SFIA has been actively used for 16 years, more recently, a number of other frameworks have been developed. While these frameworks have different structures, style, and underlying principles, if one puts aside any commercial or political interests, they share a common intent – to help to enhance the skills and competency of those working IT (or in some cases a subset of IT).

While the global reach and user-base of any framework other than SFIA is negligible, in sharing that common aim, it makes sense to look at possibilities for collaboration.

This has also been driven by organisations that are looking to use a skills or competency framework wanting to know how such a framework 'maps to SFIA'; in effect having a mapping against SFIA, validates these other frameworks against the de facto global IT Skills and Competency Framework.

Note: There is no particular reason why more than one skills and competency framework should not co-exist but logic does suggest that understanding the differences among the frameworks and considering working towards one makes sense.

It is probably true to say that the SFIA Framework has been a significant input into most of the skills frameworks developed or under development.

## 3.2 SFIA

SFIA, The Skills Framework for the Information Age was first published in 2000: this was as a result of a collaboration by a number of organisations that had been using, or working with, several different UK competency frameworks; an example would be the BCS' Industry Structure Model from the late 1980s/1990. The SFIA Foundation was established as a not-for-profit organisation to develop, maintain and promote the framework for the benefit of the IT industry and IT professionals in the UK.

As a not-for-profit organisation, the Foundation has never actively promoted the framework either within the UK or globally; the framework has simply been made available to those who want to use it. The vast majority of users make use of SFIA free of charge with only a modest charge being made for commercial exploitation (selling SFIA consultancy and tools).

Regardless of 'legal ownership' – SFIA is 'owned' by the global IT Industry user community, it is updated through open consultation with its users; it is used by industry because of its usefulness, kept relevant, and there are no barriers to its use. It is not enforced or mandated by any body.

Since 2000, thousands of organisations have made use of the SFIA Framework, many have presented at the various SFIA conferences, most recently in Australia with nearly 20 case study presentations. Many organisations have embedded SFIA deeply into their skills management activities and do not separately recognise SFIA from what they do.

SFIA is the basis of a number of large programmes: Australian Public Sector IT job roles are defined using SFIA skills; the BCS Chartered status, membership, career paths and professional development scheme is underpinned by SFIA.

A number of tool providers provide support for the SFIA framework and numerous organisations have built their own internal tooling.

SFIA is available in 6 languages with two more under discussion

## 3.3 e-CF

Development of the European Competency Framework (e-CF) project was initiated in 2005 encouraged by the European Commission. Following input, and high-level involvement, from European ICT sector experts and stakeholders, the framework's first version was published in 2008. By 2010, and with experience and application feedback, version 2 was then published: a framework with greater depth, updated user guide, new methodology documentation and an online tool with user-specific profile building capabilities.

The e-CF was originally established in order to offer a competency tool with underlying knowledge for European ICT professionals. Being structured with 4 Dimensions, the framework includes organisational perspectives (in Dimensions 1 and 2) together with Dimension 3 to 'bridge individual and organisational competences'. Rapid changes within the ICT environment, ensures that e-CF, being 'durable', undergoes maintenance every three years; the current Version 3 was published in 2014.

Throughout its life, e-CF has been trialled in a number of pilot projects, approximately 40, and the e-CF project is now funding the marketing and promotion both inside and outside of Europe to gain uptake beyond these pilot projects.

At present the e-CF project is not-for-profit, however once EU funding ceases then the funding model and ownership is unclear.

e-CF has developed a profiling tool to support the e-CF framework.

e-CF is available in 4 European languages presently.

## 4 Method for Mapping

### 4.1 Introduction

This mapping has been carried out by ‘desk study’ and a survey of skills and competency (SFIA) experts, who have many years’ hands-on experience of enhancing IT skills within user organisations and, specifically, the use of SFIA. Additionally, there are inputs from a number of organisations that have undertaken mappings to ‘some degree’.

Note: The input to this mapping has largely come from the SFIA community. This is because there is a very much greater user community than e-CF, a global reach and many more years of implementation practice.

The section below describes current mappings made available to this study and gives an overview of some of the issues that they do not cover adequately: this mapping exercise will try to take these mappings further and begin to address some of those issues. It has however, become apparent just how complex this mapping exercise really is and so, while this mapping takes things further and identifies some of the issues, it probably does not address all issues completely.

When choosing a mapping – or, indeed, embarking on a mapping – one must consider the purpose the mapping will be put to, it is likely that with a different objective one mapping might be different to another. Some possible uses are listed below:

- Validating or justifying one framework against another
- Enabling either framework to be used for comparison against a model of competence e.g. for individual certification where any tolerance is critical.
- Internal use in managing and developing skills and competencies and only needing a superficial awareness of other frameworks – i.e. the tolerances are interesting rather than critical.

Mapping for equivalence, for example certification, is very different to mapping for the provision of training or subject qualification.

One additional issue to be considered is that of language and translation: SFIA is first produced in English then translated into 6 languages (with 2 more scheduled); e-CF’s profiling tool is available in 4 European languages (not sure of the production process to identify the original language of e-CF but maintenance updates include words changes in order to clarify meanings). It is possible that some misinterpretations may have been introduced in translations and this mapping has not taken this into account.

### 4.2 Existing Mappings

A number of mappings have been produced and those made available to this exercise have been considered in this report. None is identified nor critiqued specifically as the

circumstances of those mappings are not known. It is fair to say that a number of those mappings have been mostly ‘an initial cursory glance’ and take a rather simplistic view.

Whilst a useful ‘first look’ – and, no doubt, useful for the purpose that they were intended – these mappings have rather oversimplified the situation and, typically, not explored beyond the name of the skill or competence in one framework to the name of the skill or competence in the other, in order to establish ‘equivalence’.

Firstly, the description below the name has often not been considered and the ‘mapper’ has used their subjective view of what they understand the skill to be and concluded that since it is called the same, or pretty much so, and the description matches to some degree, then the skills or competence equate: the detail below the description, therefore, has almost certainly not been fully considered.

Secondly, the current mappings made available to this study, make a reasonable high-level mapping of the levels (SFIA 1-7 and e-CF 1-5) effectively by saying 1=1 and 7=5 and then distributing the levels some how in between: again this is useful to some degree but lacks the rigour of detailed comparison and can be quite misleading.

And thirdly, the underlying concepts and principles have not generally been considered as part of mapping exercises.

### 4.3 What makes a good Mapping?

A good mapping is one that fairly represents:

- How the frameworks are related
- Determines equivalence – essential for certification or rigorous comparison
- Adequately describes and compares the underlying concepts
- Identifies equivalences, omissions or gaps
- Considers tolerances
- Identifies issues for users
- Enables considered selection
- Allows a determination under one framework to be equated to a determination in the other framework

It is likely that there is a lot of personal opinion in any mapping and, although undesirable, it does reflect the subjective nature of such an exercise; while this is to be minimised, it probably cannot be removed altogether.

An example of this is ‘tolerance’. Both models are discrete scales of competence one of 5 levels and one of 7 levels – half-levels make no sense at all. It is often difficult to determine if someone is at one level or another even in one framework, but where a level in one framework bridges two levels in the other framework this adds complication and introduces more ‘error’ – put simply there is probably an error of one framework level in any mapping and this is very significant where the number of levels is as few as 5.

This exercise is intended to form the basis of a workshop to review mappings and decide what mapping could be taken forward as the ‘agreed-mapping’. It is also intended to inform future discussions on collaboration and any possible merging of the two frameworks. For

this reason, the mapping is intended to be fair but also to not ignore issues which need to be resolved if such a mapping is to be used for direct comparison, contractual purposes or certification of any rigour.

## 5 Comparative Description of the two Frameworks

### 5.1 Introduction and High-Level Similarities

Both e-CF and SFIA aim to do the same thing – provide a means of characterising the skills and competencies necessary for roles within IT. Both frameworks, of course, use similar terms, sometimes for the same thing and sometimes for a different aspect – this has the potential to cause confusion, as it leads to assumptions.

A comparison summary of some of the areas needed to be considered is provided in Appendix A along with a reference to the comparison mapping document which provides detail at the individual skills and competencies in each framework.

Both frameworks are models of skills or competencies against a level of competence or proficiency. Not all skills or competencies can be practised at all levels, for instance, a strategic IT skill is not practised at SFIA Level 1 or e-CF Level 1.

Both frameworks describe attributes that are additional to the skill or competency at level but necessary to underpin that skill at level. The frameworks each have a consistent structure that enables easy navigation.

For the purposes of this review, a comparison of the structure of each framework is provided below with detailed description of the structure in subsequent sections.

SFIA	e-CF		Comment
Category/sub-category	e-CF Area	Dimension 1	A convenience for organising the skills and competencies. SFIA has an 'area of work' view and e-CF has a 'lifecycle view'. Both have more of a business change than an engineering flavour.
Skill	Competence	Dimension 2	The Skills or Competencies in the framework: for example: Project Management (SFIA) & Project Management (e-CF)
Skill Description	(Competence) Description		A description of the Skill (SFIA) or Competency (e-CF) These are generally similar although style varies between the frameworks.
Level	Proficiency Level	Dimension 3	The competence or proficiency scale SFIA: 7 levels. e-CF: 5 levels.
Skill at Level	Proficiency at Level		A description of the Skill (SFIA) or Competency (e-CF) at each Level. Both describe actions performed for the skill or competence at increasing levels of proficiency or competence.
	Skill Area	Dimension 4	These are additional statements of actions for an e-CF Competence. SFIA: These statements are usually included in the Skills Description and/or the Skill at Level. e-CF: Additional skills statements apply to all levels.
	Knowledge Area		SFIA: deliberately does not define knowledge areas for the skills. It does, however, imply knowledge of appropriate technologies and, more specifically, non-technical aspects within the levels. e-CF: identifies a mix of technical and non-technical knowledge.
Generic Responsibility Attributes			SFIA: This is key - a generic description of attributes for any level. e-CF: Not explicitly defined other than in the description of alignment with the EQF but Business Skills and Influence are not explicitly covered and some descriptions span levels.

### Mapped Structure of the Frameworks

## 5.2 SFIA

### 5.2.1 SFIA Overview

SFIA has identified 97 IT skills (Professional Skills) and 7 levels of competence. While the number of skills has varied a little over the releases, the number of levels, 7, has not. Not all skills can be practised at all levels, for instance, a strategic IT skill is not practised at SFIA Level 1. A key component of the SFIA Framework is the concept of demonstrated experience of a professional skill and generic responsibilities.

SFIA describes Professional Skills at levels of competence. While recognising the importance of other attributes, SFIA does not make an attempt to define these.

- Professional Skills  
SFIA defines professional skills

- **Behavioural Skills**  
SFIA does not define behavioural skills as many organisations have their own internal behaviours and values defined. An organisation’s internal behaviours and values can generally be aligned to the SFIA Generic Responsibilities.
- **Knowledge**  
SFIA recognises the importance of knowledge but does not define requirements. Technologies, standards, and legislation changes frequently and organisation requirements vary – SFIA does not define knowledge requirements.
- **Experience**  
SFIA recognises experience through demonstrated practice of the professional skill at level. It does not place particular requirements on years or any other particular description of experience.
- **Qualifications**  
SFIA recognises the part qualifications play but does not define requirements. Qualifications change as new offerings are available and, in general, qualification does not equate to demonstrated experience of competence – SFIA does not define qualification requirements.

While several organisations have extended SFIA to address the above areas, at least in part, SFIA has left this to SFIA users rather than make definitions in this area.

### 5.2.2 SFIA Generic Responsibilities

The levels of responsibility and accountability used in SFIA (the 7 levels) are described in generic terms and the individual skill at level descriptions are defined to be consistent with these generic levels. The SFIA Generic Responsibilities are:

- **Autonomy**
- **Influence**
- **Complexity**
- **Business Skills**

Simply, at higher levels of competence one would be expected to have greater autonomy, greater influence, be able to handle greater complexity, and have a better understanding and consideration of business skills.

### 5.2.3 SFIA Structure

SFIA Skills (professional skills) are arranged into Categories and Sub-Categories these are just logical collections and to aid navigation. The categories do not relate to any particular lifecycle or standard although if one is working in a particular area then it is likely that one will have skills mostly from that area, Delivery and Operation, for instance.

SFIA Categories are:

- **Strategy and Architecture**
- **Change and Transformation**
- **Development and Implementation**

- Delivery and Operations
- Skills & Quality
- Relationships and Engagement

Throughout the SFIA Reference Guide, Skills are structured consistently as follows:

- Skill Name  
A name used for reference.
- Skill Code  
A unique simple code.
- Overall Description  
A broad definition of the skill.
- Level Descriptions  
A definition of the skill at each of the 7 levels. The phrasing facilitates their use as professional competencies. In general these are single paragraphs, of a few sentences, describing what is should be demonstrated at that level for that skill.

## 5.3 E-CF

### 5.3.1 e-CF Overview

e-CF has identified 40 IT Competencies and 5 Levels. The 5 levels are mapped to the European Qualification Framework (EQF) levels 3-8. Not all competencies are described at all levels. The e-CF introduces 'Dimensions' as a means of structuring the information in a consistent way: Dimension 1, for instance, provides a grouping that would be recognised with a lifecycle view as Plan, Build, Run, supported by Enable and controlled by Manage.

### 5.3.2 Alignment with the EQF

Whilst not described as such, there is categorising in e-CF that could be seen as similar to the generics from SFIA, notably the table at the end aligning the e-CF Levels to the EQF Levels.

The levels of responsibility and accountability (the 7 levels in SFIA) are described in generic terms and the individual skill at level descriptions are defined to be consistent with these generic levels. The e-CF Generic Responsibilities are:

- Level Description
- Typical Tasks
- Complexity
- Autonomy
- Behaviour

At higher levels of proficiency, one would be expected to have greater autonomy and handle greater complexity: there is no explicit linking to the business and the introduction of Behaviour.

It is unclear whether these attributes actually form a part of the e-CF or whether they have been included merely for additional explanation of the framework.

One aspect of this which is particularly useful is the anecdotal description of Levels to ‘example position’ such as ‘Senior Professional / Manager’.

### 5.3.3 E-CF Structure

The structure of the e-CF is consistent: essentially the competencies (Dimension 2) are distributed throughout the e-CF areas (Dimension 1). Each competence is described at up to 5 levels of proficiency (Dimension 3) and up to 14 knowledge statements and 11 skills statements (Dimension 4):

- e-CF Area – Dimension 1  
There are 5 e-CF areas which are groupings:
  - A. Plan
  - B. Build
  - C. Run
  - D. Enable
  - E. Manage
- e-CF Competence – Dimension 2  
The 40 e-CF Competencies are distributed throughout the 5 e-CF areas. Each competence has a Name and an overall Description.
- e-CF Proficiency Level – Dimension 3  
Each of the competencies has up to 5 proficiency levels, with not all competencies having an entry at each level.
- e-CF Skills and Knowledge – Dimension 4  
Each competency can also have a number of Skill descriptors and Knowledge Descriptors. These may be a single sentence or just a couple of words e.g. ‘market needs’ for a knowledge or ‘think out of the box’ for a skill. These additional statements apply to the competence at all levels.

Note: Although e-CF uses the term ‘Dimension’, it is, nonetheless, a 2-dimensional model of 40 competencies by 5 levels. The statements for knowledge and skills are unique to the competence they are associated with and are additional information to describe the competence.

## 5.4 Ease of Use

Any user new to skills and competency frameworks may consider both frameworks complex: there are 97 skills at 7 levels in SFIA (the generic responsibilities are often forgotten); there are 40 competencies at 5 levels with up to 14 knowledge statements and 11 skills statements in e-CF (and the significance of the alignment to the EQF could be overlooked).

In reality, if you are familiar with one framework then, with a good amount of reading, the other framework is quite understandable.

Both frameworks can be obtained by downloading the documentation from the respective website. SFIA is available as one document and e-CF, while available as one document, has two supporting documents and also a description of the EQF. In addition to the framework, the e-CF documentation describes more about how the framework was developed and the various organisations that were involved in the working groups to define the model: this is

likely to be indicative of the funding that the e-CF project has received and the need to generate good quality documentation for such a project; SFIA, lacking similar funding, has not produced this type of documentation. Additionally, the SFIA Foundation has concentrated on the Framework and not in suggesting its use to industry; these aspects are discussed throughout the global user community and through various papers from individual SFIA users.

The ‘SFIA Wall Chart’ is a simple A3 document and, once one is familiar with the framework, this provides great initial navigation with subsequent reference to the Reference Model for detail (e-CF should publish something similar).

The single competence per page nature of the e-CF document is particularly clear.

Note: The various uses of SFIA (and how it is applied for those uses) are only briefly touched on within SFIA documentation.

## 6 Detailed Mapping of SFIA and e-CF

### 6.1 Introduction

While both frameworks have the same aim they have different structures, terminology, underlying concepts and presentation. This section describes the mapping in detail. It is presented in three parts:

- Style
- Underlying concepts
- Levels
- Skills / Competencies
- Approach and Use

In determining whether a SFIA Skills is adequately addressed by an e-CF Competence (and vice versa) the following components need to be considered as a whole:

- SFIA
  - Generic Responsibilities for a Level
  - Skill Description
  - Skill Level Description
- e-CF
  - e-CF and EQF Level Table
  - Competence Description
  - e-CF Proficiency Level description
  - Competence Skill Areas
  - Competence Knowledge Areas

## 6.2 Style

In general, printed matter is better presented in e-CF. This probably reflects the more adequately funded nature of that project and the need for e-CF to describe how the ‘project’ has run both for the European Commission and also to encourage a user-base. SFIA documentation, while improving, is not yet as polished as it should be.

SFIA, however, seems to be more consolidated. In a single document there is a description of underlying concepts, ideas for use and the whole of the Framework. The information in SFIA is more readable in context, this is particularly true in the comparison with the e-CF ‘Dimension 4’ attributes, which are often just a few words and not of a consistent level.

While organised in different ways, the amount of text describing a SFIA Skills at a Level is much the same as that for an e-CF Competence at Level.

## 6.3 Underlying Concepts

While both frameworks have the same aim they have different structures, and terminology, and differences to some underlying concepts.

### 6.3.1 SFIA

The SFIA Framework is founded on the belief that demonstrated experience is essential in determining whether a skill or competence is present. It does not define any particular length of service, qualification, knowledge or level of knowledge. It is recognised that qualifications can be valuable and knowledge is essential but it does not seek to define or describe these in detail.

To be able to perform a skill at a particular level it is expected that one can perform the skill at the level below and so on. (This is something currently being debated.)

The nature of the skills change as one moves up the levels, in particular, the operational competence of a skill at Level 6 may be greater than the operational competence of the skill at Level 7 – this is one aspect of the debate mentioned in the previous paragraph.

To perform a role one will likely require more than one skill, possibly at different levels.

The Generic Levels of Responsibility are an essential component of SFIA and pitches a level of operation on the basis of Autonomy, Influence, Complexity and Business Skills.

The model must be relevant to industry, and that industry is the best qualified to ensure its relevance and integrity going forward. SFIA is therefore updated and validated by its users through the user group and Council by open consultation – the Framework itself is not driven by any particular agenda.

Use of SFIA is not ‘pushed’ by the Foundation, rather it is ‘pulled’ by industry and business.

### 6.3.2 e-CF

e-CF is also founded on the belief that experience of the competence being performed is essential but the framework is linked to the EQF and requires increasing knowledge, innovation and technical competence as one moves up the levels (this increasing level of knowledge is not necessarily a reflection of industry). The e-CF and EQF Level table would appear to be key to e-CF but seems to be placed in an appendix to the framework, so does

not appear to have the same relevance to the framework as the generic responsibilities of SFIA, although there is much overlap in their intent.

The inclusion of 'Behaviour' in the Appendix table is worthy of further development; at present the statements are written as additional tasks.

The 'Influence' descriptions in the Appendix table are very light (one or two words) and span levels that then make them less useable for determining level.

The Dimension 4 components of the competencies appear to be less well formed than the other components of the framework. Superficially, this suggests more detail but, in fact, when scrutinised they are not described and are open to significant interpretation, and it is not clear what part they would play in using the framework. They are clearly there to bolster the Competency Descriptions but potentially will be ignored as they are difficult to interpret comparatively ('thinking outside of the box', 'security', etc..).

e-CF appears to be 'pushed' by industry bodies, certification organisations, and EU Government (illustrated by its adoption as an European Standard and discussions on pushing this down onto industry); at present there is not a 'pull' from industry.

## 6.4 Levels

### 6.4.1 Overview

Both frameworks describe what the level is for each skill. In the case of SFIA, this is done through a mix of the Generic Responsibilities, the Skills Description and the Level Description for the skill. In the case of e-CF, this is done through a mix of the Competence Description, the e-CF Proficiency Description, the Skill Statements and the Knowledge Statements and a table of Levels mapped to the EQF.

Both frameworks recognise that there are some generic attributes for the Levels but these are more explicitly identified in SFIA and considered key. The table in an appendix to the e-CF addresses the SFIA Generic Responsibilities to some degree but it is unclear whether this is given the same importance as in SFIA. The inclusion of 'Attitude' is particularly interesting and could be hugely beneficial to a framework (SFIA could benefit from this) but the descriptions of attitude are more additional tasks performed rather than 'professional attitude'.

The table below illustrates the alignment of SFIA Levels and e-CF Levels. This is discussed more specifically in the sections below.

SFIA Levels		e-CF Levels		Comment
7	Set strategy, Inspire, Mobilise			SFIA & e-CF Levels overlap. e-CF Level 5 is really Tech/Skill Leadership SFIA Level 7 is generally above e-CF Level 5 organisationally. Clarify skill leadership vs org. leadership and accountability
6	Initiate, Influence	e-CF 5	Principal	SFIA & e-CF Levels overlap. e-CF Level 5 could be SFIA Level 6 (more likely) or 7 (weakly). SFIA Level 6 is either e-CF Level 4 or 5 (more likely).
5	Ensure, Advise	e-CF 4	Lead Professional	SFIA & e-CF Levels overlap. e-CF Level 4 could be SFIA Level 5 (more likely) or 6 (weakly). SFIA Level 5 is either e-CF Level 3 or 4 (more likely).
4	Enable	e-CF 3	Senior Professional or Manager	SFIA & e-CF Levels overlap. e-CF Level 3 could be SFIA Level 4 or 5. SFIA Level 4 is e-CF Level 3.
3	Apply	e-CF 2	Professional	SFIA & e-CF Levels overlap. e-CF Level 2 could be SFIA Level 2 or 3. SFIA Level 3 is e-CF Level 2
2	Assist			SFIA & e-CF Levels overlap. e-CF Level 2 could be SFIA Level 2 or 3. SFIA Level 2 is either e-CF Level 1 or 2.
1	Follow	e-CF 1	Associate	SFIA & e-CF Levels overlap. SFIA: Appears to start at a lower level than e-CF. e-CF Level 1 could be SFIA Level 1 or 2. SFIA Level 1 is e-CF Level 1 or lower (?).

### Mapped Alignment of Levels

#### 6.4.2 SFIA

The SFIA Levels have an anecdotal descriptor which is useful, and then generic descriptions of Autonomy, Influence, Complexity and Business Skills: these have been refined over the years but have not been significantly changed as they have served industry and business well.

SFIA could probably benefit from adding something like the Level descriptors and Behaviours of e-CF but would have to have generic Behaviour descriptions rather than cross over into the behaviours and values that organisations have evolved themselves.

SFIA has 7 levels and some users feel that the current situation does not have adequate range between Level 3 and Level 6; while this is outside the scope of this review, it illustrates that there are still questions to be answered regards current levels.

#### 6.4.3 e-CF

e-CF Levels have a more explicit descriptor similar to role title e.g. Associate, then a Level description and generic descriptions of Typical Tasks, Complexity, Autonomy and Behaviour. Behaviour is more a description of work performed rather than behaviour. There is no recognition of business skills and complexity descriptions span more than one level, which makes it difficult to use as a component of determining a level.

A particularly good aspect of the e-CF is the generic Level Description past the title.

The equating of the e-CF Levels to the EQF Level is powerful in promoting both those frameworks but it makes a link that is probably not a reflection of reality. EQF Level 8 is 'knowledge at the most advanced frontier ...', e-CF Level 5 is equated to this but it does not generally reflect an industry and business view.

## 6.5 Skills and Competences

### 6.5.1 Overview

In considering the mapping of the two frameworks, refer to the Mapping Matrices presented in a separate excel document. This section provides a summary and discussion of the mapping:

Generally an e-CF Competence is equivalent to a SFIA Skill with the skill descriptor very similar; the Level Descriptors are similar too although SFIA's are more detailed and give some context. The e-CF Dimension 4 attributes (skills) add further content to e-CF to bolster the level descriptors (to equal SFIA) and in some case add specifics not present in SFIA. The knowledge statements do not have an equivalent in SFIA although there is the presumption that, in having the skill, one has the underlying knowledge. Specific knowledge statements in e-CF, and also, to some extent, the skills statements do not fit well with the design goal of SFIA to be generic to any IT environment and the importance of the e-CF skill and knowledge statements are not clear (whether mandatory, how many are required and to what level).

There are 97 SFIA skills and 40 e-CF Competencies. SFIA has a greater breadth than e-CF. However, it is not quite so straightforward, as some of the SFIA skills could be considered satisfied by one e-CF Competency; for example, the 4 SFIA Quality Management skills are covered by the single e-CF ICT Quality Management Competency to some degree. Where this is the case the level of description is much greater in SFIA (albeit spread across the greater number of skills).

There are several SFIA Skills that are not addressed by e-CF and some instances where a skill is only addressed because e-CF uses a single word in the description.

With regard to e-CF, most Competencies appear to be covered by SFIA (sometimes by more than one SFIA Skill), three stand out as not being adequately satisfied. SFIA does not have the explicit knowledge statements and avoids being specific with regards to both knowledge and skills.

The 'Dimension 4' attributes of e-CF are useful but are generally omitted from SFIA. Some of the skills from Dimension 4 are covered in the descriptions in the core skills of SFIA or at Level but not all. The knowledge statements are not addressed in SFIA at all. When using SFIA there is an assumption that the underlying necessary knowledge is present – it is not defined explicitly because knowledge and qualification requirements appear to change rapidly, and often, and also are dependent on context and national area.

While the 'Dimension 4' attributes of e-CF are potentially useful they are not sufficiently defined to be used to determine competency; they are also aligned at all levels of a Competence and not increasing with level; they are not all required, but suggested, and are not exhaustive. As a result they cannot really form part of an assessment of competence and certainly could not be considered a standard.

## 6.6 Approach and Use

Both frameworks can be interpreted for a specific instance and therefore direct comparison is dependent on the intended use. In fact both frameworks need to be interpreted – for instance is a skill satisfied if any part of the skill, as defined in the framework, is not satisfied? In the case of e-CF for instance, how much ‘thinking outside the box’ is necessary for each level? In both frameworks what underlying knowledge is actually required and how is this determined?

## 7 Collaboration – Towards a single IT Skills Framework

### 7.1 Introduction - Bringing SFIA and e-CF ‘closer together’

Clearly, there are benefits in bringing the two frameworks closer together. Both Frameworks share the same issues that need to be addressed and while SFIA has been dealing with these issues with minimal revenue it has nevertheless managed to support a global network of SFIA use. The e-CF, while currently enjoying significant EU funding to get established, will eventually experience these same issues, and once it has to be self-funding (when EU funding ceases) will find itself in the same position as SFIA. Unlike SFIA, e-CF does have the benefit of not having to be useful outside of Europe but this is also a hindrance to uptake on a global scale. Undoubtedly, there would be benefits for industry if there were one accepted, properly funded, framework.

The complexity of the mapping should not be underestimated. By having two different structures and some differences in the underlying principles it is not so straightforward to simply align skills with competencies and Levels with Levels. This requires extraction and comparison of the words from the various parts of each framework. That said whilst a mapping is complex and would need to be maintained as new versions of the frameworks are published, it is nonetheless straightforward to see how the frameworks could be brought together over a number of iterations, albeit that a number of underlying principles of each framework need to be agreed.

In fact, it is probably easier to see how the two frameworks could be brought together than to establish a mapping of the two frameworks for equivalence and maintain that mapping through future versions of both frameworks.

Both frameworks claim to be a common language for IT skills and competency. Bizarrely, while there was only SFIA, there was indeed a common language for IT skills; since there are now two ‘languages’ neither is truly common.

### 7.2 Considerations for the two frameworks operating independently

There is no particular reason why the two frameworks should not go on operating independently in parallel. After all, SFIA has been operating for 16 years and has established a global user-base – it manages to support updates to the framework and support for its users despite operating with minimal funding. The e-CF, while considerably younger and without such a strong user-base, has the backing of significant EU funding and a number of organisations like professional bodies ‘pushing it down’ to users. This situation could certainly continue but does lead to a number of confusions:

- Industry and Business are unsure which framework to adopt

- They do not want to back the wrong one, so will probably do nothing while waiting for the dust to settle.
- National support organisations are unsure which to recommend
  - Decisions will typically be made for political rather than sound engineering reasons.
- Industry and Business always question why the two exist in the first place
- Service providers do not want to have to support two frameworks
- Both organisations will be watching the other rather than doing the right thing for industry and business
- Both frameworks need similar support
  - This is expensive to do twice, it would be better to put efforts into providing one definitive framework

To some degree there will always be different frameworks apart from e-CF and SFIA. In recent months i-CD from Japan have approached the SFIA Foundation to ask how it manages its activities and is looking to collaborate with SFIA to gain more recognition internationally. A number of other countries have approached SFIA in recent months for guidance in developing or managing their skills frameworks.

### **7.3 Considerations in SFIA and e-CF moving ‘closer together’**

In bringing the two frameworks closer together it is the underlying concepts of the two frameworks and the intended use that need to be considered first. Once these are agreed then the alignment of e-CF to the EQF and, in particular, that greater knowledge may not equate to greater level of operation, influence or competence can be considered and then the number of Levels (how can 5 Levels align to 7 Levels?) can be established

In practice, the Levels cause problems; people naturally want to be seen as the highest level they can – after all, being SFIA Level 7 must be better than being SFIA Level 6 (and similarly for e-CF), although the most competent person in a particular area may be SFIA Level 6 and not Level 7.

As to the number of Levels, while SFIA has had 7 levels since its inception there has been on-going debate whether this is the right number – it is not that there might be fewer levels but more.

While there are obvious benefits to be had from the two frameworks coming closer together, or perhaps merging as one, this needs to be well considered as it will inevitably lead to confusion and potentially damage the existing user base.

The following will need to be considered:

- What does ‘moving closer together’ mean?
  - Is this mutual recognition of approaches and levelling or merging to arrive at one global framework?
- Users

- e-CF – The user base, although only small and confined to Europe, has invested in adopting this framework and would not want to move to something else.
- SFIA – The SFIA user base, much larger and global, has similarly invested and would not want to move to something that it sees as less relevant.
- Ownership
  - e-CF is seen as owned by Europe and moving to ownership by ‘professional bodies’
  - SFIA is seen as ‘owned’ by the users and is truly global.
- Approach to adoption
  - e-CF is seen to be pushing the framework down to users from the ‘ownership committee’.
  - SFIA is not ‘pushed’ by anyone; it is ‘pulled’ by users. The SFIA Board, although recognised as in the ‘control position’ is not felt to be pushing SFIA; if anything, the users see the Board holding back.
- Globalisation
  - e-CF, once well established, is European and largely driven by the EU down to the European Countries.
  - SFIA, on the other hand, is truly global with significant use and representation from countries outside of Europe: this must be recognised and, in particular, that there is no central organisation pushing this.
- Funding
  - How would the merging be funded?
  - How would the end framework be funded on an on-going basis?
- Timescales
  - There are still SFIA users on SFIA V4 and V5; there is no particular reason why they should move to a new version, presumably this is true for e-CF. The requirements for this would need to be considered.
  - It seems reasonable that over one or two update cycles the two frameworks could be brought closer together and indeed merged in that timeframe.
- Leadership
  - Leadership for merging would need to be established without fear for the user base.
- Users
  - Throughout such activities the users would have to be the primary consideration; this framework should, first and foremost, be intended to enable users to develop the skills of their staff or individuals to enhance their own skills. Use for promoting certification or particular training or qualifications should be secondary.
- Migration

- Apart from an understanding of mapping should there be an approach for a user migrating from one framework to another?
- Underlying Principles
  - A common set of underlying principles would need to be established.
- Levels
  - A rigorous alignment of levels would need to be established.
  - Realignment of the Levels of both Frameworks slightly would clarify the mapping and lead to an obvious moving together. Aligning e-CF Levels 1-5 strictly to SFIA 2-6 would address the need to widen operational Levels in SFIA, and recognise the level below e-CF and the more CxO nature of SFIA Level 7.
  - Although there would be consequences for both SFIA and e-CF this should be considered for a moving together. Clearly the issues for SFIA would affect many more SFIA users, and there would be issues regarding EQF alignment for e-CF that would probably affect training providers more than end-user organisations.

## 8 Possible Outline Collaboration Project

### 8.1 Overview

While it is out of scope of this comparison and mapping report it is nevertheless worth considering an outline of a collaboration project.

Fundamentally, this section considers a sensible approach to collaborating and ultimately merging the two frameworks into one as there seems little point in stopping short of this. It is possible to collaborate without ultimately merging but is unlikely to be successful: SFIA is global and must address global needs with minimal funding and certainly no funding to allow taking part in such a collaboration on an equal basis of involvement; e-CF has a European focus, is well-funded and can engage in the political issues necessary to drive this through but does not have the global reach or the user involvement. In any such project the following conditions should be met:

- There should be no negative impact on current users
- Existing users must see their investment protected
- There must be equal participation from both parties
- There should be a published roadmap for this project
- There should be an incremental bringing together through new versions of each framework
- The ‘merging’ must be able to be stopped at any time without damaging either framework or the investment of current users
- The end product must be upwardly compatible from previous versions of each framework

## 8.2 Phased approach to Collaboration

The project should be split into a number of Phases:

- Phase 1 Collaboration Planning
  - Comparison and Mapping Review
  - Definition of Roadmap and Intent
  - Clarification of ownership, funding and collaboration structure
  - Definition of the collaboration framework
  - Collaboration Checkpoint
- Phase 2 Collaboration and Merging Activities
  - Establish joint operations
  - Initiate collaborative update cycle – iterative (over 3-5 years)
  - Establish global user community infrastructure
  - Define and establish Framework infrastructure
  - Checkpoints throughout
- Phase 3 Operation
  - Single operation – BAU (business-as-usual)

## Appendix A

Detail of the comparison mapping of individual skills and competencies in each framework is provided in the associated Excel Mapping Matrices – SFIAV6 e-CF Comparison V1.0.

A comparison summary of some of the areas that need to be considered in selecting or merging the frameworks is provided below.

Comparison Point	SFIA	e-CF
Coverage of breadth and depth of Enterprise IT (See mapping matrices)	Greater coverage for typical roles and operating models found in IT. Greater granularity e.g. c. 18 skills in Delivery & Operation	Some single competencies may encompass several skills e.g. Service Delivery as a single competence.
Detail	Greater detail per skill in SFIA (if e-CF Dimension 4 is not considered).	Less detail per competence in e-CF. This is bolstered by the additions of 'Skills and Knowledge statements'.
Structure	Logical consistent structure.	Logical consistent structure.
Approach	The SFIA approach of everything needed being described in one paragraph per skill level is in response to industry requirements.	The multi-dimensional approach of e-CF aids clarity when within a tool but less usable without tool support.
Longevity / Currency	15+ years / Version 6 2015	7+ years / Version 3 2014
Technologies, methods, knowledge and qualifications	SFIA does not mandate technologies, methods or qualifications.	e-CF 'suggests' methods and knowledge within Dimension 4 statements that might be required.
Underlying principles	Requires demonstrated experience of performing the skill at level. Generic responsibility levels attributes are key.	Alignment of EQF. Generic attributes of levels described but their importance is unclear.
Documentation	Single Complete Reference Model Document. Less professionally presented.	Multiple documents describing the framework and how the framework has been created. More professional publications.
Availability	Free to download from the SFIA website. Available in 6 languages (more planned).	Free to download from the SFIA website. Available in 4 languages (more planned).
Need for interpretation	SFIA needs to be interpreted in use.	e-CF needs to be interpreted in use.
Update approach	Open consultation of the global userbase, proposed changes reviewed by the userbase and managed publication.	Updates by expert panel selected from e-CF community and framework authoring consultants.
Costs	Free of charge for non-commercial (end-user) use. Licence fee for commercial exploitation (service providers and tool vendors)	Free of charge for all use.
Funding	Modest licence fee for commercial exploitation.	Funded by EU.
Long term sustainability	Currently self sustaining from licence fees.	Unknown should EU funding cease.
Marketing Model	Pull from industry.	Push from EU / Professional Bodies.
User Base	Difficult to estimate. Some use in nearly 200 countries. Around 4000 user licences for SFIA V6. Many thousands of other users from SFIA V4 and V5 but information archived as not used to market SFIA. Probably many thousands of unlicensed users globally.	Difficult to estimate. 40 case studies published. This is being pushed by the EU so there is probably greater uptake than from the case studies alone.
Ecosystem	Significant supporting infrastructure including: User Council, user community, governing body. Accreditation of consultants, partners and trainers. User conferences in UK and Australia.	e-CF is yet to establish the same ecosystem as SFIA.