

The EU Foundational ICT BoK: an “academia” viewpoint

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- Informatics Europe

- Full support to the initiative launched by the EU Commission
- Constructive contribution that should guide in the next steps
- Stakeholders' roles in this endeavour
- Detail comments to follow

- **Definition:** “*The ontology for the ICT domain that defines the base-level of knowledge required of **all ICT professionals** and that serves as ‘go-to’ reference for anyone interested in working in the IT profession*”
- **Target audience:** “***Education** and other service providers can use the Body of Knowledge as a source of reference, to **design their curricula** and certifications products from a common accepted model*”

- **BoK main domain:** “ICT for business”

- **BoK structure:**
 - Strategy and Management
 - Technology

- **BoK suggestions for education:**
 - “*Curricula should also be structured to ensure that all these items are basically addressed*”
 - “*Student employability should be put at the heart of curricula design*”

- **BoK main domain:** “ICT for *business*”
 - ◆ Backward looking rather than forward looking
 - ◆ Pervasiveness and ubiquity of ICT
 - ◆ ICT is everywhere, from *business* to health to education to entertainment
 - ◆ physical world, social interactions

- **BoK structure:**
 - Strategy and Management
 - Technology
 - **other dimensions**

- *Foundational BoK:*
 - **Semantics of “foundational”**
 - **long lasting vs immediate knowledge (?!)**

- **BoK suggestions for education:**

“Curricula should also be structured to ensure that all these items are basically addressed”

possibly, hopefully, but ...

- motivations of students (namely, would-be professionals in their early stage) seem quite orthogonal to business-like orientation of ICT
- good ICT training and then business orientation or
- good business training and then ICT (consolidated measurable learning outcomes)

“Student employability should be put at the heart of curricula design”

definitely no, foundations are for the future, not for short term employability

- eCF 3.0 and its “dimensions”

European e-Competence Framework 3.0 overview

Dimension 1 5 e-CF areas (A – E)	Dimension 2 40 e-Competences identified	Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3–8				
		e-1	e-2	e-3	e-4	e-5
A. PLAN	A.1. IS and Business Strategy Alignment					
	A.2. Service Level Management					
	A.3. Business Plan Development					
	A.4. Product/Service Planning					
	A.5. Architecture Design					
	A.6. Application Design					
	A.7. Technology Trend Monitoring					
	A.8. Sustainable Development					
	A.9. Innovating					
B. BUILD	B.1. Application Development					
	B.2. Component Integration					
	B.3. Testing					
	B.4. Solution Deployment					
	B.5. Documentation Production					
	B.6. Systems Engineering					
C. RUN	C.1. User Support					
	C.2. Change Support					
	C.3. Service Delivery					
	C.4. Problem Management					
D. ENABLE	D.1. Information Security Strategy Development					
	D.2. ICT Quality Strategy Development					
	D.3. Education and Training Provision					

▪ eCF 3.0 – 4rth dimension

Dimension 1 e-Comp. area	B. BUILD				
Dimension 2 e-Competence: Title + generic description	B.1. Application Development Interprets the application design to develop a suitable application in accordance with customer needs. Adapts existing solutions by e.g. porting an application to another operating system. Codes, debugs, tests and documents and communicates product development stages. Selects appropriate technical options for development such as reusing, improving or reconfiguration of existing components. Optimises efficiency, cost and quality. Validates results with user representatives, integrates and commissions the overall solution.				
Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3 to 8	Level 1	Level 2	Level 3	Level 4	Level 5
	Acts under guidance to develop, test and document applications.	Systematically develops and validates applications.	Acts creatively to develop applications and to select appropriate technical options. Accounts for others development activities. Optimizes application development, maintenance and performance by employing design patterns and by reusing proved solutions.	–	–
Dimension 4 Knowledge examples <i>Knows/aware of/ familiar with</i>	K1 appropriate software programs/modules K2 hardware components, tools and hardware architectures K3 functional & technical designing K4 state of the art technologies K5 programming languages K6 Power consumption models of software and/or hardware K7 DBMS K8 operating Systems and software platforms K9 Integrated development environment (IDE) K10 rapid application development (RAD) K11 IPR issues K12 modeling technology and languages K13 interface definition languages (IDL) K14 security				

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3.4.3 Application development

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Knowledge
examples
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employing design patterns and by reusing proved solution

a) What is the Foundational Knowledge required?

- Hardware and Software fundamentals
- Computer Programming
- Systems Programming
- Database management and administration
- Data modelling and engineering
- Application management
- Object Orientation
- Solution Architecture

- BoK vs eCF
 - coarse granularity of knowledge items in both
 - foundational specs should offer a reacher syllabus

- Deploying the BoK in formal education
 - **Business schools**
 - a lot of work, since technology is “hard”
 - **ICT master-level degrees**
 - ad-hoc design of mixed curricula
 - **ICT post master-level degrees**
 - business-driven, ad hoc tailored for a well defined career path

Thank you !

you can contact me at

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