

**CEN**

**CWA 15005**

**WORKSHOP**

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**AGREEMENT**

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English version

**ICT Curriculum Development Guidelines for the ICT supply industry - a review by CEN/ISSS ICT-Skills Workshop of the Career Space work**

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## Foreword

The production of this CEN Workshop Agreement (CWA) was formally accepted at the kick-off meeting of the CEN/ISSS ICT-Skills Workshop on 2003-04-16.

The proposers for this Workshop were CEDEFOP, CEPIS and the Career Space consortium of ICT companies. Prof. Wolffried Stucky, CEPIS, chaired the Workshop, and Mr. Burkart Sellin, CEDEFOP, acted as the Vice-Chair. Cedefop also contributed by setting up and running an interactive website and virtual community<sup>1</sup> and by organising two teleconferences on behalf of CEN/ISSS and proposers. Career Space kindly agreed to allow CEN/ISSS to use and incorporate its Curriculum Development Guidelines into the CWAs on a royalty-free basis.

Funding for the operation of the Workshop was provided by CEDEFOP. This included funding for the Workshop Secretariat, for the drafting and editing of the CWAs by Alan Power, and for the animation of and reporting on the discussions in relation to the Virtual Community and teleconferences.

This CWA was agreed upon by the contributing partners in this Workshop, representing a wide mix of interests, including ICT the supply industry, ICT professional bodies, research institutions, universities, certification providers, training organizations, public authorities. Registered participants of the CEN/ISSS Workshop are listed in Annex B.

This CEN Workshop Agreement is the result of reviewing the Curriculum Development Guidelines, which were developed by the Career Space consortium and published by CEDEFOP in 2001. These guidelines can be found at [www.career-space.com](http://www.career-space.com). Additional material on the Career Space web site is not the subject of this review and CWA.

A Virtual Community, hosted by Cedefop, was established to provide a web-based platform for the exchange of views and comments on the material. All of these discussions can be found at <http://cedefop.communityzero.com/cen-ict>.

Physical meetings took place on 2003-09-10/11 and on 2003-09-25/26. A teleconference between the Workshop participants was organized on 2003-11-06 to decide on the final revisions. The CWA was approved after a final endorsement process, which started on 2004-02-06 and ended on 2004-02-30. The final text of this CWA was submitted to CEN for publication on 2004-02-23.

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<sup>1</sup> <http://cedefop.communityzero.com/cen-ict>

## 0. Introduction

### 0.1 Background

The Career Space Generic ICT Skills Profiles and Curriculum Development Guidelines were developed by the Career Space consortium in order to address the gap between the needs of the ICT industry for skilled staff and the available supply.

The profiles were developed to attract people to the ICT industry, particularly students, and to excite them about the jobs and opportunities available by showing:

- the types of jobs requiring ICT skills which were available in the industry, the skills an individual would need to do these jobs
- the type of person each job would suit

Within the CEN/ISSS Workshop, two activities were established to review and update the Career Space consortium's work, and to take into account any other activities in this area. This second CEN Workshop Agreement (CWA) is based on the Career Space consortium's Curriculum Development Guidelines.

### 0.2 Purpose of the Curriculum Development Guidelines

The Curriculum Development Guidelines were developed by the Career Space consortium, with the participation of European Universities and Technical Institutions, to provide academia with structured guidelines to assist in the development of ICT curricula.

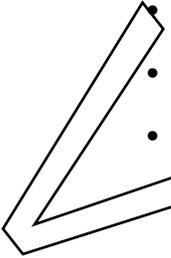
The consortium believes that the way in which engineering and computer studies students are educated should change, to help overcome the ICT skills shortages in the 21<sup>st</sup> century.

The guidelines do not set out to tell academia how to develop their curricula but offer information and suggestions about the needs of the ICT sector. They provide a basis for universities and technical institutions to revise and review the content of their curricula.

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# 1 Scope

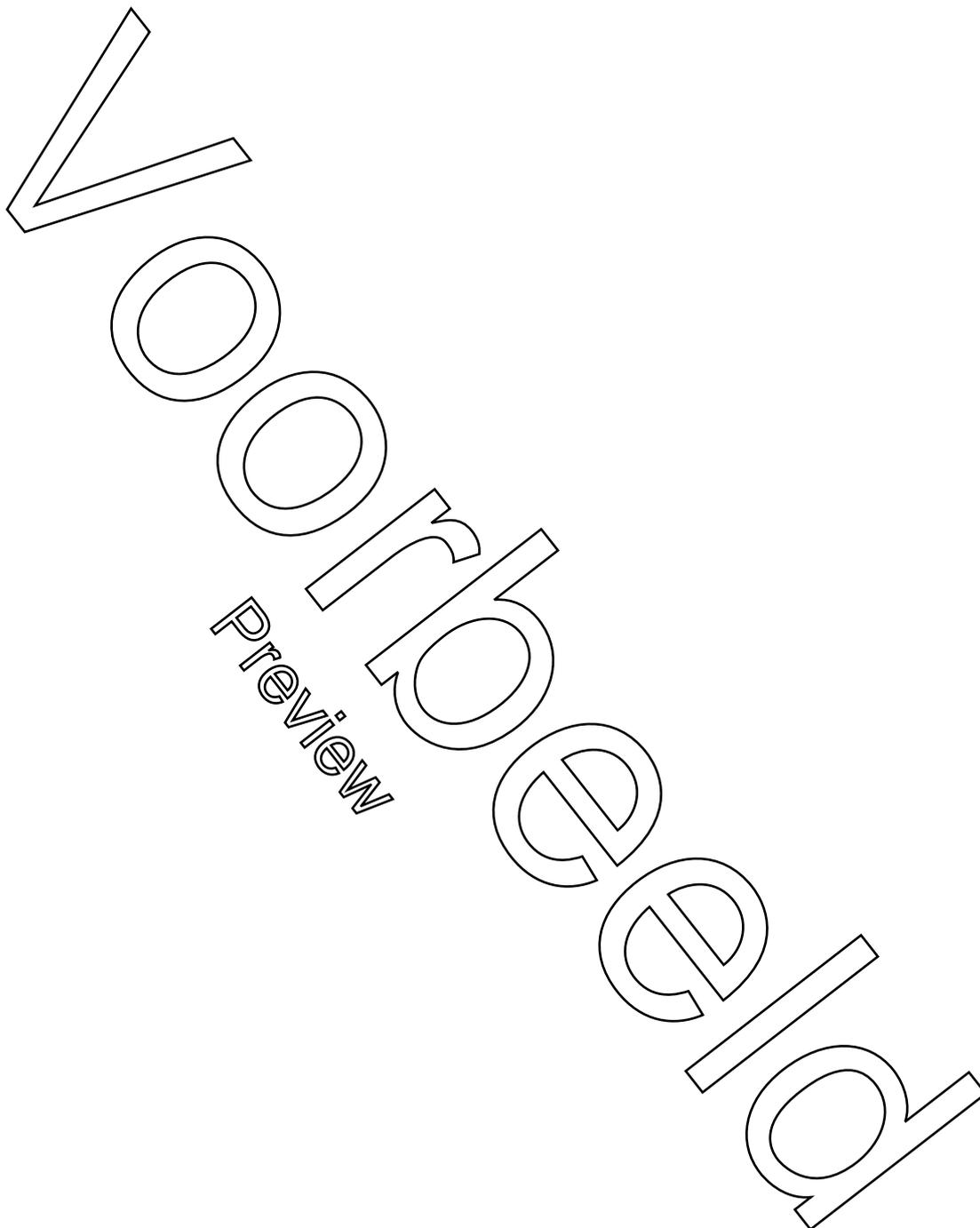
This document records the findings of the review and validation process that took place in the CEN/ISSS ICT-Skills Workshop. It has been produced following an extensive period of consultation and review lasting from April to November 2003.

- 
- Section 2 “Conclusions and Agreements” contains the formal agreement of this Workshop.
  - Section 3 “Detailed Findings and Comments” describes the key issues raised during the Workshop and shows how they have been addressed.
  - Annex C contains the revised Curriculum Development Guidelines produced by this Workshop.

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## 2 Conclusions and Agreements

The revised curriculum development guidelines, to be found in Annex C, are accepted as valid and the Workshop recommends their use by European universities and technical institutions when they come to develop, review or revise ICT curricula.



## 3 Detailed Findings and Comments

This section addresses the main topics and issues raised in the comments received

### 3.1 Usefulness of Curriculum Guidelines

#### Summary

Position (are they useful?)	Reference (see Annex A)
Yes	3
Yes (but)	5
Yes	17
Yes	18

#### Extract of Comments

- In general, we consider the curricula development guidelines complete and sound (3)
- We find a lack of methodology in the descriptions of how to develop a curriculum & in the description of how to establish job profiles that are associated to a given curriculum. (3)
- What is the benefit to the institution? Could they take the degree with a statement (Certificate perhaps) that the programme meets the requirements of a particular job profile? (5)
- What would happen if someone tries – on the grounds of the current curriculum development guidelines – to develop a curriculum from a current generic job profile description? (3)
- Generally the skills profiles has proven very useful in the development/ modernisation of the curricula at our university (18).
- The GENIUS project focuses on: New Curricula content development, based on the New ICT Curricula guidelines proposed by the Career Space consortium (17)

#### Workshop Conclusion

The Career Space Curriculum Development Guidelines are a very useful basis for development of curricula for ICT courses at first degree level and should be adopted across Europe for this purpose.

### 3.2 More depth needed for training providers

#### Summary

Position (is this required?)	Reference (see Annex A)
Yes	3
Yes	4
Yes	5

### Extract of Comments

- ... inappropriate to substantially describe a particular role, or provide training providers with a sufficient amount of information for their intended qualification procedure, or help establishing viable criteria for quality assurance and/or certification... (3)
- ... job profiles do not themselves say anything about how or when to acquire knowledge. (4)
- mapping provided to academic content (5)

### Analysis

The curriculum guidelines are 'guidelines' not a detailed definition of curriculum content. It was felt that the role of academia is to produce this level of detail and is a major point of differentiation between institutions.

This relates to Section 4.3 "Job role' definition schemes" in the other CWA 'Generic ICT Skills Profiles for the ICT supply industry – a review by the CEN/ISSS ICT-Skills Workshop of the Career Space work' that was endorsed by the Workshop, in that more detailed skills definitions would come from more detailed job role descriptions.

### Workshop Conclusion

No change

## 3.3 Changes to curriculum development guidelines

### Extract of Comments

The following summarise the major points made by Professor W Stucky which have been incorporated into the revised version of the guidelines in Annex C.

- Reduce the emphasis on Electrical Engineering
- Include specifically communication and language skills as part of personal skills.
- Say that %'s of different components can vary.
- Request universities to open their doors to adult learners.
- Various other textual changes.

### Workshop Conclusion

The CWA should contain these revised curriculum development guidelines.

## 3.4 Maintenance and Review

### Extract of Comments

The rapid evolution of computing requires an ongoing review of the corresponding curriculum (20)

### Workshop Conclusion

The CEN/ISSS procedure to review approved material in 3 years should be invoked in the case of these Curriculum Development Guidelines. If there were strong enough support a CEN/ISSS review could be carried out in a shorter space of time.

In the interval, Career Space and others running projects on the university level curricula should review their continuing validity and propose changes. However, they would not be approved by this workshop until a CEN/ISSS review has been carried out.

### 3.5 Applicability to other educational levels

#### Extract of Comments

No, the guidelines do not correspond to lower level or vocational education or training qualifications, since they clearly apply to degree and higher education level (2)

#### Workshop Conclusion

The Guidelines under review should not be extended to cover vocational or sub-degree level guidelines, because the latter would require a fundamentally different structure.

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