

The Fraunhofer Knowledge Network (FKN) for Training in Critical Design Disciplines

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For the application of new technologies with ever shorter lifecycles, the availability of the most recent knowledge is mandatory. The intervals within which acquired knowledge bases therefore have to be updated, become shorter and shorter. It is well known that software development tools and systems are getting more and more sophisticated, and the learning expenditure for the personnel is growing accordingly. This tendency affects major parts of the electrical and electronics industry where demand for qualified workforce already manifests itself in the 'designer crisis'. The combined effects of the increased functionality of new tool generations, the change of application areas of relevant methods due to technological progress and the improvement of the information exchange facilities lead to increased requirements with respect to further professional training.

The microelectronic industry and related business sectors are extremely innovative and knowledge based. Students, engineers, scientists and others need to develop, transfer and share knowledge. The above mentioned knowledge processes and knowledge flow from researchers and universities to industry and vice versa need to be strengthened to ensure a leading edge position for European companies and institutes in this market.

The shortage of ICT skills is now understood as the most critical factor hindering the growth of the European economy, and the ICT sector specifically. The microelectronics industry, which is fuelling the growth of the ICT sector, is particularly hit because it is not only confronted with a strongly growing demand for specialists, but in addition with a stagnating supply.

The Fraunhofer Gesellschaft (FhG) in Germany has started the project FKN which aims to reduce these bottlenecks by implementing research training in leading educational centres under the guidance of industry in a critical discipline of microelectronics design and test: Design under electromagnetic compatibility (EMC) constraints and analogue/mixed signal design. Other educational centres are under preparation which will be

installed with the support of the European Commission in the IST-Accompanying Measure-project LIMA (Learning Platform in Microelectronic Applications).

Training material for these important design areas has to be prepared and integrated in a Web-based training platform which has to be specified, developed and filled with content following the educational and industrial needs.

The Fraunhofer Gesellschaft represents a big advantage for the customers: The microelectronic related institutes (6 out of 56) offer the whole spectrum of design (and technology) knowledge which is continuously updated in projects with customers. So, the knowledge, which could be offered for professional education and training, is always on the highest level from the scientific and practical point of view.

It is therefore very important to separate the FKN organisation into two parts:

1. Responsibility for the content of the training courses: The Fraunhofer Institutes are responsible for
 - Content preparation
 - Content upgrading
 - First user care, test and experience
 - Tutoring
2. Business responsibility: An – from the content providers – independent organisation is responsible for
 - Professional offer of courses
 - Guarantee and maintenance
 - Certification
 - Hotline support
 - Marketing

Acknowledgement

This work was partly supported by the EU with the IST project LIMA (No. 30140).