MULTIMEDIA CD-ROM: "AN INTRODUCTION TO THE WORLD OF MICROSYSTEMS"

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1. Objectives

The objective of the multimedia CD-ROM is to provide a basic understanding of what microsystems are and what technologies are involved.

The FSRM launched in 1993 its course programme entitled "Training in Microsystems", which today includes 23 short courses on microsystems related topics. These courses run all over Europe and over 1700 researchers and engineers have already attended. They form the priority target group of the CD. In future, all course participants will receive the CD in advance of the course, in order to acquire a common basic knowledge on microsystems. This shall prevent the course tutor to spend too much time, up to a quarter of the total course duration, on an introduction to microsystems.

In addition, the CD is designed to be used for the promotion of microsystems in industry, schools and in the media.

Finally, it will be a valuable tool for engineering professors to use in their lectures on microsystems and microsystem technologies.

2. Content

The CD provides an interactive journey inside six commercially available microsystems. This approach was chosen to overcome the generally shared image, that microsystems are very nice technological challenges, but often useless and not economically viable.

The six examples were selected in order to cover a large spectrum both of application fields and fabrication technologies.

Figure 1 shows the main entry screen with the six examples:

1. a barometer module for consumer applications, developed and commercialised by Intersema, Switzerland;
2. a 2 by 2 optical switch for telecommunication, developed by the University of Neuchâtel and commercialised by Sercalo Microtechnology, Switzerland;
3. a microspectrometer for medical and industrial applications, developed by Forschungszentrum Karlsruhe and commercialised by Microparts, Germany;
4. a crash sensor for automotive applications (air-bag), developed and commercialised by SensoNor, Norway;
5. an implantable micropump for medical applications, developed and commercialised by Debiotech, Switzerland;
6. an accelerometer module for industrial applications, developed and commercialised by CSEM, Switzerland;

For each of these examples, five different aspects are shown: a short description, the functionality, the fabrication, the applications and the economics.

The description of the fabrication processes used for the production of these six devices leads to a detailed description, enhanced with animations, pictures and video sequences, of many single processes used in microsystem technology. This technological aspect is also available directly by a second entry screen. Here again, the descriptions are not limited to technical aspects of how the processes work, but also show the required equipment and its cost.

3. Navigation Concept

The design of the navigation concept and its implementation were realised by mib-génie logiciel, Switzerland.