



Project no.: 34041

ACCORD

Advanced Components Cooperation for Optoelectronics Research and Development

Instrument type: **SPECIFIC SUPPORT ACTION**
Priority name: **Information Society Technologies**

Final Report (M01 – M44)
Final plan for using and disseminating the knowledge

PUBLISHABLE

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Project co-ordinator organisation name: **IMEC**

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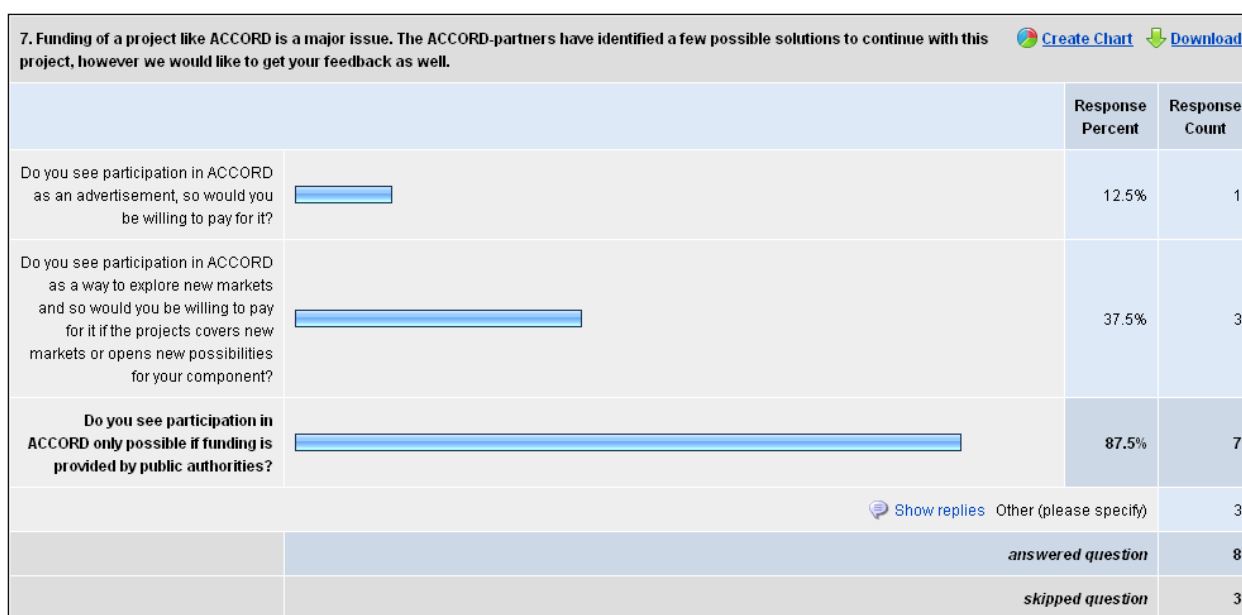
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1 Exploitable knowledge and its Use

The exploitable results the ACCORD-project:

The project is set up as a platform for cooperative industry-university research on pre-competitive photonic components in the European economic area. This exchange is carried out at no net cost to participating industries and universities. The exploitable result from the ACCORD-project itself is the knowledge and experience obtained in setting up and running a platform like this. Part of the project involved exploring possibilities to set up a self-sustainable programme. The outcome of this first evaluation was mainly negative, in the sense that feedback from industry learned that public funding is required to run a programme like this.

Based on the experience and findings from ACCORD, a new FP7-project, NEXPRESSO, was launched to explore new modalities in search of long-term collaborative programme.



The exploitable results the ACCORD-funded projects:

The ACCORD project informs the industry and university R&D communities about the components exchange program and solicits proposals for both components to be provided and then for R&D to be performed on the components selected for the program.

The results from the R&D projects will not be exploited by the ACCORD-consortium, nor will there be any financial return to the consortium on these results.

How the results might be exploited or how they might be used in further research (including expected timings)

The results from the R&D projects have been presented at specific workshops organised by the ACCORD consortium, co-located with major events. These workshops have been used to disseminate the project results but also the idea and the concept of the ACCORD-project.

2 Dissemination of knowledge

In view of the specific character of the ACCORD-project, no commercialisation of the results obtained within the projects is planned. It is however planned to investigate the possibility of setting up a self-sustainable programme similar to the ACCORD-programme after finishing the ACCORD-project.

Actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
	<i>Press release (press)</i>				
26/09/06	Press Release	General public	Europe		All
	<i>Exhibitions</i>				
03-08/04/06	Photonics Europe 2006	R&D, HE, Industry	Europe		
25-28/09/06	ECOC 2006	R&D, HE, Industry	Europe		
01/2007	Photonics West 2007	R&D, HE, Industry	Europe		
06/2007	Laser 2007	R&D, HE, Industry	Europe		
17-20/09/07	ECOC 2007	R&D, HE, Industry	Europe		
01/2008	Photonics West 2008	R&D, HE, Industry	Europe		
07-11/04/08	Photonics Europe 2008	R&D, HE, Industry	Europe		
06/2008	Laser 2008	R&D, HE, Industry	Europe		
22-25/09/08	ECOC 2008	R&D, HE, Industry	Europe		
25-27/11/08	ICT Lyon 2008	R&D, HE, Industry	Europe		
25-29/01/09	Photonics West 2009	R&D, HE, Industry	Europe		
15-18/06/09	Laser 2009	R&D, HE, Industry	Europe		
21-24/09/09	ECOC 2009	R&D, HE, Industry	Europe		
25-28/01/10	Photonics West 2010	R&D, HE, Industry	Europe		
12-16/04/10	Photonics Europe 2010	R&D, HE, Industry	Europe		
	<i>Workshops</i>				
10/04/08	Photonics Europe 2008	R&D, HE, Industry	Europe		
23/09/08	ECOC 2008	R&D, HE, Industry	Europe		
26/11/08	ICT Lyon 2008	R&D, HE, Industry	Europe		
16/06/09	Laser 2009	R&D, HE, Industry	Europe		
14/04/10	Photonics Europe 2010	R&D, HE, Industry	Europe		
	<i>Project web-site</i>				
	www.ist-accord.org	R&D, HE, Industry	Europe		
	<i>Direct e-mailing</i>				
08/03/07	Newsletter No. 1	R&D, HE, Industry	Europe		
31/04/07	Newsletter No. 2	R&D, HE, Industry	Europe		
19/06/07	Newsletter No. 3	R&D, HE, Industry	Europe		
11/09/07	Newsletter No. 4	R&D, HE, Industry	Europe		
16/01/08	Newsletter No. 5	R&D, HE, Industry	Europe		
08/04/08	Newsletter No. 6	R&D, HE, Industry	Europe		
15/09/08	Newsletter No. 7	R&D, HE, Industry	Europe		
10/11/08	Newsletter No. 8	R&D, HE, Industry	Europe		
12/06/09	Newsletter No. 9	R&D, HE, Industry	Europe		
20/12/09	Newsletter No. 10	R&D, HE, Industry	Europe		
30/03/10	Newsletter No. 11	R&D, HE, Industry	Europe		

2.1 Engaging with the public

2.1.1 Presence at international events:

The ACCORD-project was presented at several occasions, workshops and events, such as:

- Photonics Europe 2006
- ECOC 2006
- Photonics West 2007
- Laser 2007
- ECOC 2007
- Photonics West 2008
- Photonics Europe 2008
- Laser 2008
- ECOC 2008
- ICT Lyon 2008
- Photonics West 2009
- World of Photonics Laser 2009
- ECOC 2009
- Photonics West 2010
- Photonics Europe 2010



2.1.2 ACCORD Workshops:

ACCORD workshops were organized at (this reporting period):

- Photonics Europe 2008, Strasbourg, France on 10/04/08
- ECOC 2008, Brussels, Belgium on 23/09/08
- World of Photonics 2009 Munich, Germany on 16/06/09
- Photonics Europe 2010, Brussels Belgium on 14/04/10

2.1.3 Newsletters:

In total 11 newsletters were issued at specific points during the project or related to major events or trade-shows (front page of 1st newsletter reproduced below). ACCORD and the ACCORD-pcalls were also published in newsletters and announcements of other FP6-projects (some examples depicted below).



ACCORD Programme Launched

ACCORD is an experimental programme under the Sixth Framework Programme of the European Union (IST-2005-2.5.1, Photonic Components), that aims to create new opportunities for both photonics companies and photonics students.

Inside this issue:

- ACCORD Launched 1
- First Call for ACCORD 1
- FP7 launched at IST 2006 2
- Photonics 21 Annual Meeting 2006 2
- ACCORD and PTAP 3
- ACCORD and PTAP Case Study 3
- ACCORD and PTAP Case Study 3
- ACCORD at Trade shows and Conferences 4

The ACCORD programme puts pre-competitive photonic components and systems into the hands of researchers and students, at no additional cost to the university and at no additional cost to the company that provides the component. As a result, students are trained on the next generation of emerging technologies and products as identified by industry.

ACCORD will identify prototype components and purchase them from participating suppliers. ACCORD will seek proposals from participating universities for R&D projects based on these components. These universities will receive the components free of charge.

The ACCORD programme implements two of the main actions proposed in the Lisbon Initiative:

- ACCORD will provide new R&D capabilities for industry, particularly SMEs that may not have the means to maintain in-house research, development and innovation programmes.
- ACCORD will assist universities to orient their photonics research programmes toward new developments that correspond to new technological opportunities in a rapidly changing commercial market.

Moreover, by involving possible end-users in the programme, the supplying company will get access to potential new markets outside its normal field of operation.

Companies and University groups interested in the ACCORD Programme should register at www.ist-accord.org where more information is available.

First Call to Participate in ACCORD

The first call to Companies wishing to offer Pre-competitive Components to the ACCORD programme will open on 15th January 2007 and close on 16th February 2007.

Please Register your interest at www.ist-accord.org and download the Call for Participation document to obtain detailed instructions on how to participate.

The first call to Universities wishing to conduct R&D on offered components will open on 26th February 2007 and close 30th March 2007.

The list of components offered by participating companies will be available at www.ist-accord.org. Please register and access the Member's area for further details of the components. Also download the Call for Participation document to receive instructions on how to participate.

ACCORD Newsletter January 2007

NEMO's Industrial User Club
Your privileged access to expertise on micro-optics

NEMO'S INDUSTRY EVENT

Add this event to your Calendar (Outlook, Sunbird, ...)

Location
Vrije Universiteit Brussel, Belgium

Date
16 May 2008 (14:00 - 20:00)

Info
Keep in touch with Europe's key-players in micro-optics research and development, and benefit from the dynamics of Europe's Network of Excellence in Micro-Optics NEMO and its service to industry.

Scheduled programme (to be confirmed) starting at 14h:

- The photonics market today and in the future (IEEA)
- Photonics 21 - benefits for industry (a representative of Photonics 21)
- Micro-optics and Photonics in framework 7 - "opportunities for funding" (EC officer)
- Entrepreneurship in Photonics - opportunities and challenges (Vrije Universiteit Brussel)
- Access to micro-optics technologies and developments through NEMO's Industrial User Club (Jurgen Mohr)
- Access to biophotonics developments and applications through PhotonicsLife (N.A.)
- ACCORD (Peter Van Daele)

Reception at 18h.

FREE REGISTRATION HERE BELOW.

Registration
Register for this event

ASPOCOMP BARCO Breda Research elop FOS&S FUJITSU Melexis OPTICA Tjico umicore

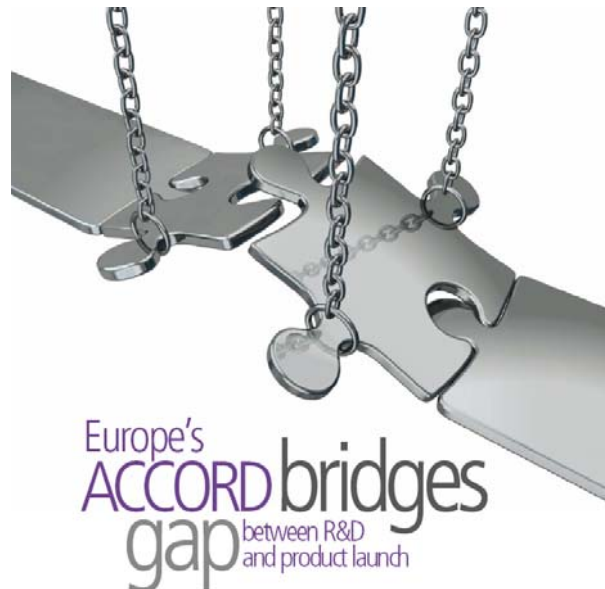
© 2004-2006, NEMO Consortium

2.1.4 Publications:

An article was written for EuroPhotonics magazine on the ACCORD project. This was organised by EPIC and co-ordinated through SOA. The issue of EuroPhotonics was circulated widely at Laser, World of Photonics

2.1.5 Web-page:

<http://www.ist-accord.org>



THE ACCORD NETWORKING INITIATIVE represents an action of direct outreach to the European photonics community. Two principal actors in this group are manufacturing industries and universities. There is clearly synergy to be gained by creating a programme that will bring these two groups together.

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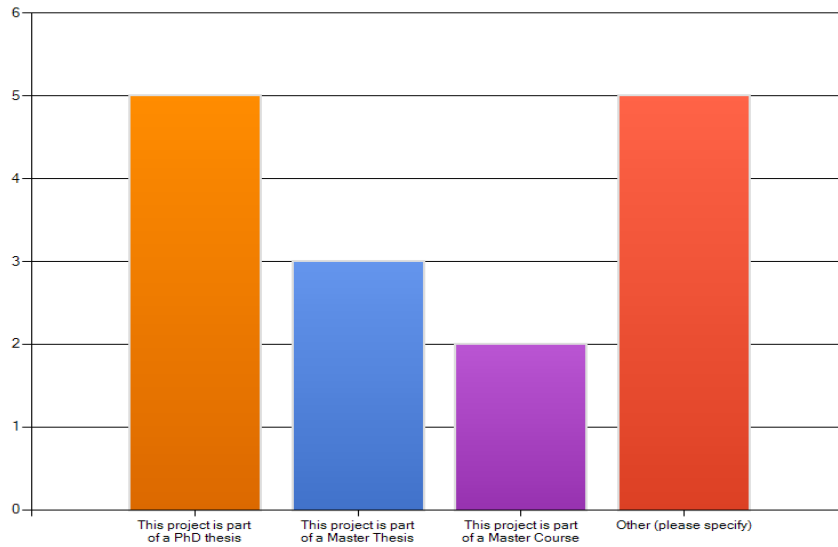
3 Publishable results

3.1 Introduction

Photonics, a field of constant innovation, produces revolutionary products and instigates capabilities based on investment in research and development (R&D). However, this investment is largely limited to precompetitive research. Bringing advanced technology to the product stage requires an equally significant investment, but resources to fund the investment are scarce. Banks will lend money based on customer orders, but if the product is still in the prototype stage, there will be no current customers. This critical gap of photonic product development – between research and development and product launch – has been dubbed the “Valley of Death” by US Rep. Vernon J. Ehlers (R-Mich.), who is also a scientist. Bridging the gap for European photonics companies is the aim of ACCORD (Advanced Components Cooperation for Optoelectronics Research and Development).

Placing prototypes into users’ hands ACCORD’s goal is to purchase precompetitive photonic devices from innovative European companies at marginal cost and to place them into the hands of European researchers and students at no net cost. It also aims to facilitate transfer of device evaluation results to potential end users, assisting companies to access new markets and applications.

As a result, students are trained in the next generation of emerging technologies and products tackled by European industries, orienting them toward advanced technology jobs and helping to develop a highly educated and productive European work force. Each company participating in the programme – particularly small and medium enterprises (SMEs) – has a new and valuable resource not only for implementing research and development at a reduced cost but also for focusing on products and issues most relevant to continued growth and success. ACCORD also enhances professional mobility, particularly for students and re- searchers originating in new-member countries of the European Union. These professionals can apply for an R&D agreement with a company located anywhere in Europe, helping to integrate additional talented resources into the European economy. In a wider sense, it is an additional resource for recruiting skilled photonics personnel. Again, this will be particularly helpful for SMEs that need highly skilled engineers and scientists but that cannot afford maintaining a large human resources network.

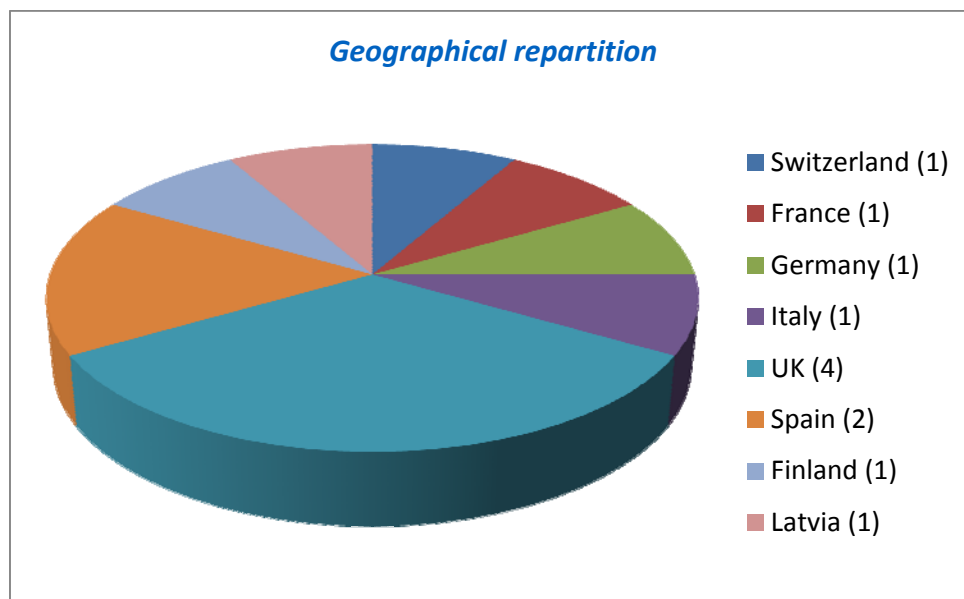


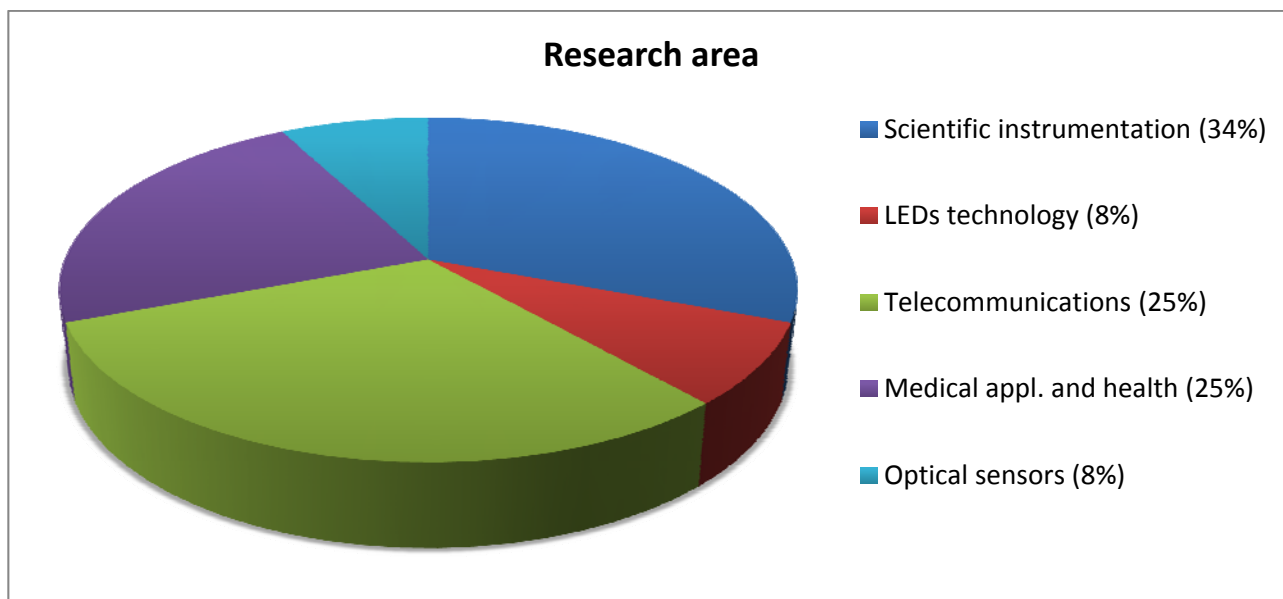
Involvement in educational programmes: work and results from ACCORD funded R&D-projects used in PhD thesis, Master Thesis or Master courses. This clearly illustrates the success of the ACCORD-project to put these pre-competitive cutting-edge components in the hands of young researchers.

ACCORD takes its inspiration from similar optoelectronic components and exchange programmes demonstrated in Japan and the US.

3.2 How it works

The ACCORD project cycle begins with a broad call to manufacturers of components and systems to submit not only a list of available prototype products but also a list of requests for R&D activities that could be performed. During the project, manufacturers have proposed products including innovative semiconductor substrates, nonlinear optical crystals, highly integrated photonic circuits, adaptive optics systems, optical wavefront shaping systems and fibre laser systems.





The second step is a call for proposals from universities for short-term R&D projects using these components and responding to the needs of manufacturers. The proposals are judged by a panel of independent experts using the following criteria: scientific value, potential for new applications, possible involvement of end users, training opportunities, cost for value, and resources and expertise.

The ACCORD project team works with the highest-ranking proposals to match universities with companies. A negotiation phase enables both parties, the supplier and the R&D group to come to a mutual agreement on how to treat intellectual property during the project. ACCORD then purchases the prototype and arranges for shipment to the university. After the work has begun, the progress is periodically tracked for milestones and objectives. If objectives are not being met, ACCORD can recover the prototype, which is on loan during the project phase.

During the project, the university and the company are expected to participate in joint public presentations of selected results. Following the successful completion of all projects, ACCORD transferred ownership of the prototype to the university with the consent of the manufacturer.

3.3 Results and reactions

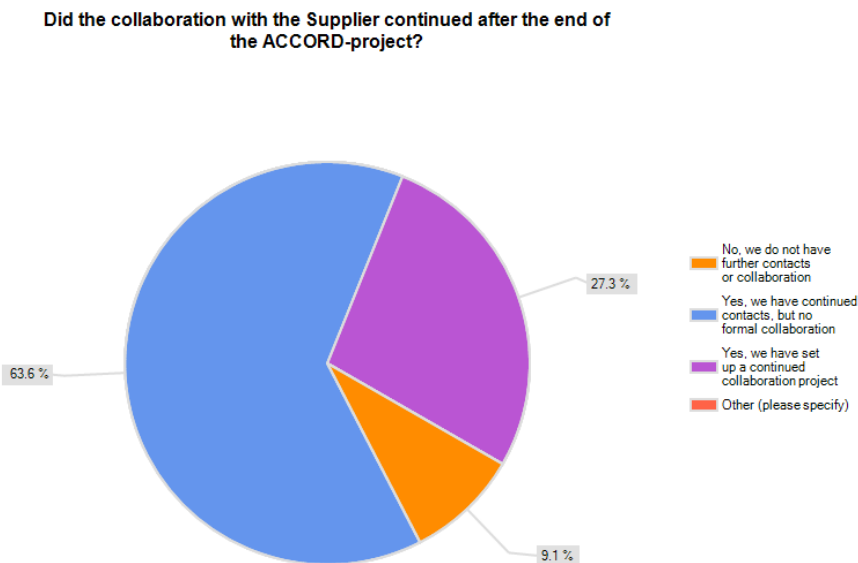
Participating companies value the twoway interaction with users, especially when it comes to exploring component performance in a new application area. This “beta stage” evaluation can provide manufacturers with advance warning about a product that must be improved or can give the “green light” to exploit a profitable new market sector.

2. Did the research carried out on your component within the ACCORD-project cover a new application or area for your company, or was this covering applications within the standard range of applications the component was designed for?		Create Chart	Download
		Response Percent	Response Count
The research involved a new application we did not have in mind before		50.0%	4
The research involved applications the component was designed for, but which we did not cover in our current targets		37.5%	3
The research involved standard applications for our component		12.5%	1
Other (please specify)		0.0%	0
<i>answered question</i>			8
<i>skipped question</i>			3

Broadening of area of application of the component / broadening of market focus is clearly achieved. The R&D-projects selected and funded by ACCORD greatly served their goal to assist SME's and component suppliers to explore new grounds and markets.

As an example, Paris-based Fastlite is designing and manufacturing some of the most advanced ultrafast pulse-shaping equipment available for femtosecond lasers. Pascal Tournois, the company’s marketing manager, likes the way that ACCORD fills a critical gap between product development and customer acceptance. “Scientific instrumentation is a domain in which the scientist customer is naturally a contributor to progress and innovation. It is beneficial for industry and customers to engage in collaboration. We have found the ACCORD program to be a very welcome efficient tool to stimulate collaborations on precise specific topics.”

Philippe Méthivier, CEO of Eolite Systems of Pessac, France, sees similar advantages. “For a young start-up ... where we are developing new fibre laser designs, it’s very important to get fast and informed feedback from users about applications potential for this new technology. The ACCORD programme allowed us to implement such a collaboration with a leading European laboratory in a way that is extremely flexible and reactive.”



New collaborative projects as a continuation with the supplier

3.4 The way forward

The ACCORD project has proved to be a force in the reorientation of academic training toward technologies that have near-term commercial potential. These directions are determined by the participating photonics companies. Participating researchers are studying and training on the next generation of photonic components rather than on the previous generation of devices, leading to reorientation of university research programmes toward components and technologies that have a realistic commercial future in Europe. This means that university researchers are working on new component technology before it is available elsewhere in the world. It also opens up a new route for placing highly educated students in high-tech jobs in Europe.

However, there are two important things to note about ACCORD: It does not distort the market for photonic devices; prototypes exist because companies have already decided that this particular technology will meet a market opportunity. It works with these prototypes, but there is no encouragement for a company to develop a custom product for the programme. Also, it does not represent a commercial subsidy; i.e., the components are not commercially available. Companies are reimbursed for their marginal cost of producing a few additional components for research purposes.

ACCORD has been a success, but it is only an experiment. Feedback from participants provides critical information on how the programme can be improved. The project has generated evidence of the need for and the value of a long-term exchange programme. The challenge is to find a self-sustaining model for developing this platform among manufacturers, universities and end users. The stakeholders' group could be very broad and could include regional development authorities; national representatives for research, education or industry; and beneficiaries of the exchange-and-evaluation programme, such as universities, manufacturers and end users. This search for possible self-sustainable programmes is continued within the FP7 NEXPRESSO-project that started June 1, 2010.