



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)
Publishable Final Activity Report

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Project co-ordinator name: **Peter Van Daele**
Project co-ordinator organisation name: **IMEC**

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1 Project execution

1.1 General Information

The ACCORD project has the objective to put pre-competitive photonic components and systems in the hands of researchers and students, at no net cost to the university or to the company that furnishes the prototypes and to facilitate transfer of the university results for potential end-users especially SMEs in new markets, new applications.

As a result, students are trained on the next generation of emerging technologies and products as identified by European industries. This training orients students toward advanced technology jobs in Europe, thus helping to develop a highly educated and productive workforce in Europe.

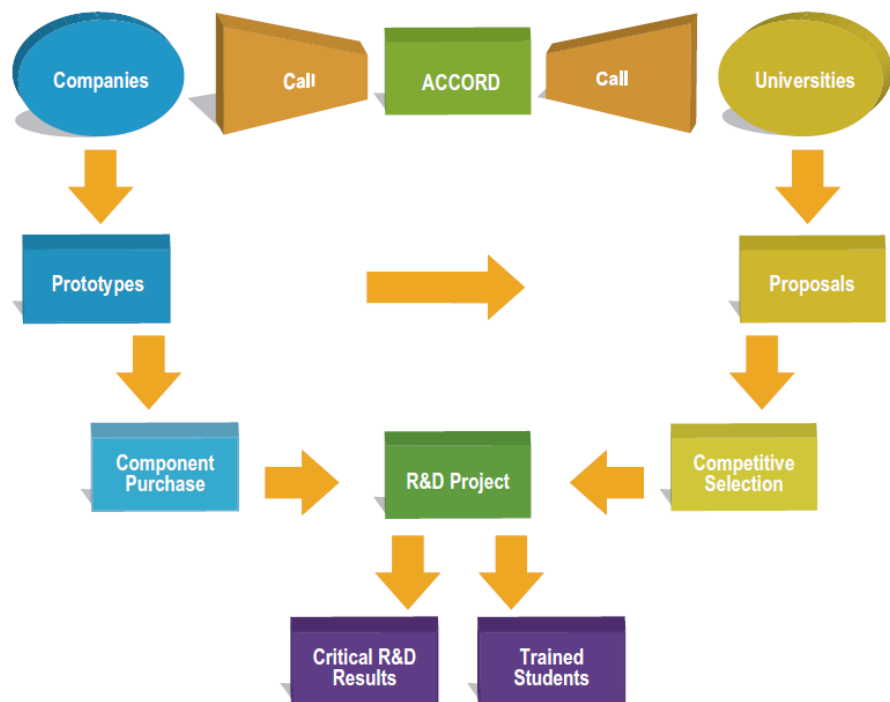
Each company that participates in the programme, and particularly so for SMEs, has a new and valuable resource for implementing research and development at a reduced cost that is also precisely focussed on the products and on the issues that are most relevant to that company’s continued growth and success.

By involving potential end-users in the programme, the supplying company gets access to possible new markets outside its normal field of operation. The supplying company therefore has a possibility to investigate possible new applications and reach out towards new markets without a significant cost.

The ACCORD project greatly enhances professional mobility, particularly for students and researchers originating in new member countries. Through the ACCORD programme these professionals will be able to apply for a R&D agreement with a company located anywhere in Europe. The ACCORD project will act as a positive force to integrate this talented resource into the European economy.

The models tested in this project and the experience gained will be used to propose a self-sustaining components exchange programme.

As illustrated in this schematic diagramme, ACCORD puts out a call to industry to compile an inventory of eligible prototype components and needs for R&D. Universities respond with proposals based on a prototype and need. The resulting R&D project speeds the time to market and trains students for industry.



1.2 The ACCORD-consortium:

P01	Interuniversity Microelectronics Center	IMEC	B
P02	European Photonics Industry Consortium	EPIC	F
P03	Multitel	Multitel	B
P04	Haute Ecole Spécialisée de Suisse Occidentale	HES-SO	CH
P05	Wroclaw University of Technology	WUT	P
P06	Sagem Défense Sécurité	SAGEM	F
P07	Scottish Optoelectronics Association	SOA	UK
P08	Perfos	Perfos	F

The project leader is Prof. Peter Van Daele, at the INTEC Dept. of IMEC (B).

1.3 Major results achieved:

1.3.1 Facilitating results:

The required documents to publish the Call for Components and Call for R&D projects were prepared and published using a broad range of channels. For the evaluation process an independent Evaluation Board was set up, made up of about 30 specialists in the broad area of Photonics. To assist the project in its operation and strategy, an External Advisory Board was also set up.

The required documents and procedures for formal agreements between the Component Supplier and the R&D group were also prepared and made available. During the course of the project the time required for finalising the negotiation was significantly reduced.

1.3.2 Operational results

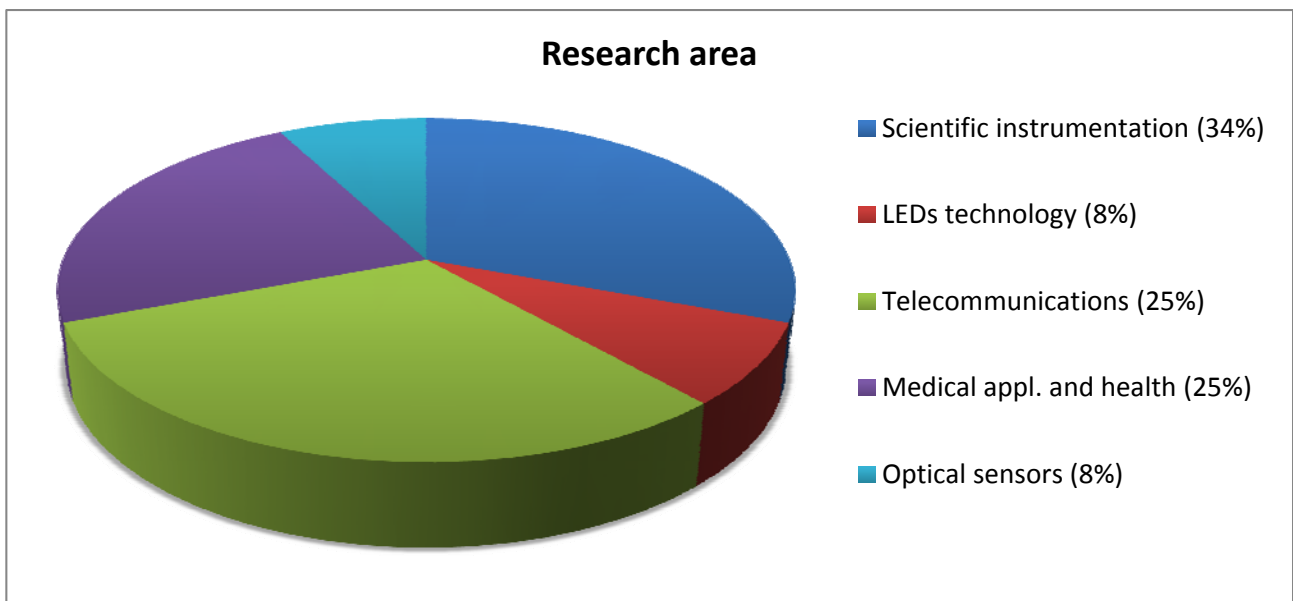
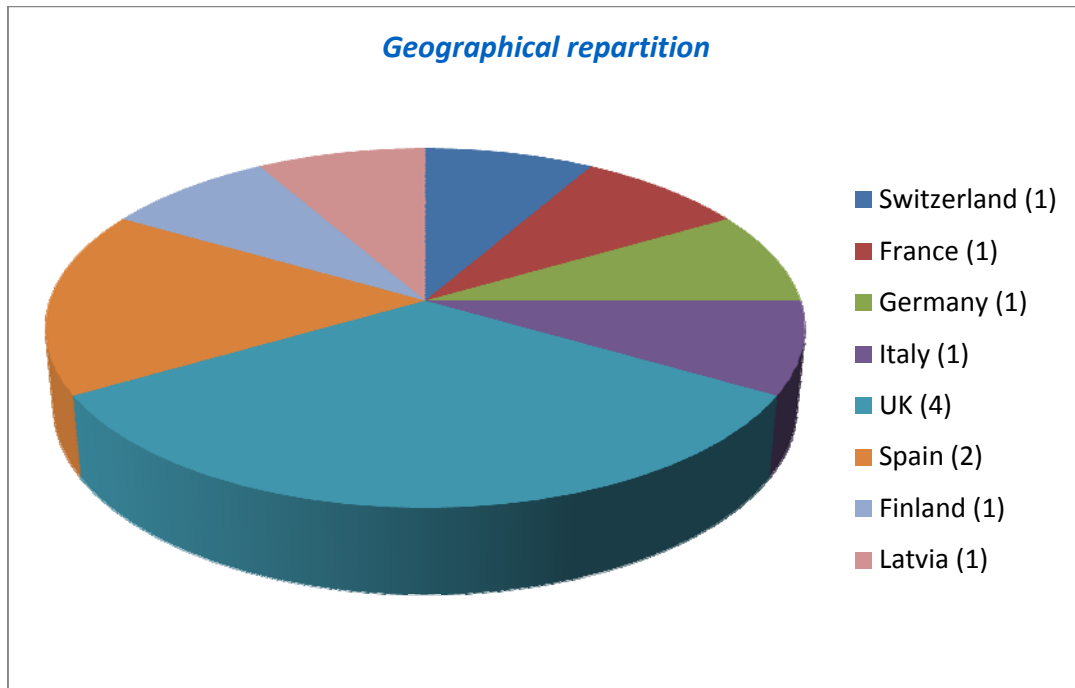
Spread over 2 Calls for components in total 37 components were submitted, of which 35 were found to be eligible. Spread over 3 calls for R&D projects, in total 31 R&D projects were submitted of which 28 were evaluated. Out of these projects in total 12 were selected to be funded. A summary is given below:

	Submitted	Evaluated	Selected
Call 1 for Components :	22		20
Call 1 for R&D projects	15	13	5
Call 2 for R&D Projects	4	3	1
Call 2 for Components	15		15
Call 3 for R&D projects	12	12	5 + 1

(The “+1” on the selected Call 3 proposals indicates the extra project selected to optimise the funds.)

The prospected target of the project was to fund 10 R&D projects, but due to optimisation of the budget and management resources, in total 12 projects could be funded.

The type of components and also the geographical spread of the projects were very broad and well spread. It is however clear that the response from country to country varies, probably related to the presence of consortium partners in these countries.



1.3.3 ACCORD Workshops

In total 4 workshops were organised at major events to present ACCORD and some of the R&D projects:

- 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

1.3.4 Overview of the ACCORD-Projects:

R&D proposal	University	Title	Component	Supervisor	Purchase Order Out	Component received	Kick-Off Meeting	Project end
102	Tampere University of Technology (FIN)	Short pulse laser Eolite Corus 10G for micromachining of biodegradable implants and grooving of silicon wafer	EOLITE - IR to UV Industrial Laser	Multitel	08/11/07	22/01/08	14/01/08	31/01/09
108	University of Latvia (LAT)	Adaptive Optics for Eye Physiology Studies	Visionica, Wavefront Sensors	WUT	07/09/07	03/10/07	15/02/08	04/06/09
109	St Andrews University (UK)	Photoporation using fiber tips	Lovalite, Fibre face components	SOA	23/09/07	22/12/07	21/01/08	03/06/08
112	Universidad Politecnica de Madrid (ES)	Testing and system upgrading	FiberLogix, All-fibre stripper	HES-SO	05/09/07	23/10/07	04/01/08	15/01/09
113	Universidad Politécnica de Valencia (ES)	Characterisation of SOAs and Electroabsorbers and their use in novel applications	CIP, SOA / EA Modulators	PERFOS	09/09/07	05/11/07	11/02/08	27/02/09
203	Strathclyde University (UK)	A multi-wavelength, time multiplexed, spectrometer for atmospheric sensing	Cascade Technologies Ltd	SAGEM	17/07/08	13/08/08	02/09/08	30/09/09
301	ETH Zurich (CH)	A high throughput terahertz spectroscopic imaging system for security applications	Onefive GmbH	Multitel	23/10/08	01/04/09	24/02/09	31/03/10
302	Georgia Tech – CNRS (F)	High quality ZnO-coated c sapphire epiwafers for the growth of GaN based LEDs	Nanovation SARL	HES-SO	22/04/09	18/05/09	18/05/09	18/02/10
304	Institute for photonic technology Jena (D)	Quasi-Multiplex CARS Microscopy with High Frame-Acquisition Rate	Fastlite	PERFOS	22/10/08	24/11/08	10/12/08	06/01/10
308	CNIT (I)	Integrated time domain optical interleaver for photonic-based full-digital radar receiver	Pirelli Labs	HES-SO	25/11/08	01/12/08	26/01/09	25/01/10
310	University of Dundee (UK)	Resonator modes in the presence of passive element for conical refraction	Conerefringent Optics S.L	SOA	24/11/08 & 05/02/08	10/12/08	10/12/08	30/06/09
312	University of Strathclyde (UK)	Adaptive optics for improved resolution in optical sectioning microscopy	Imagine Optic	SAGEM	29/10/08	01/03/09	05/03/09	23/03/10

1.3.5 Status of the components:

R&D proposal	University	Title	Supplier	Component	Component Status
102	Tampere University of Technology (FIN)	Short pulse laser Eolite Corus 10G for micromachining of biodegradable implants and grooving of silicon wafer	EOLITE	IR to UV Industrial Laser	TU Tampere decided to purchase the laser from Eolite by paying the price difference to Eolite. The laser is now in the laboratory of Tampere University.
108	University of Latvia (LAT)	Adaptive Optics for Eye Physiology Studies	Visionica	Wavefront Sensors	Components are still working and remain at R&D Group
109	St Andrews University (UK)	Photoporation using fiber tips	Lovalite	Fibre face components	Components are still working and remain at R&D Group
112	Universidad Politecnica de Madrid (ES)	Testing and system upgrading	FiberLogix	All-fibre stripper	Still working and fixed in set-up.
113	Universidad Politécnica de Valencia (ES)	Characterisation of SOAs and Electroabsorbers and their use in novel applications	CIP	SOA / EA Modulators	Components are still at R&D Group
203	Strathclyde University (UK)	A multi-wavelength, time multiplexed, spectrometer for atmospheric sensing	Cascade Technologies Ltd	Quantum cascade lasers at 5 λ in IR	Operational, used in current set-ups
301	ETH Zürich (CH)	A high throughput terahertz spectroscopic imaging system for security applications	Onefive -	Origami: passively mode-locked ultrafast laser	The laser is still working and at ETH.
302	UMI2958 Georgia Tech – CNRS (F)	High quality ZnO-coated c sapphire epiwafers for the growth of GaN based LEDs	Nanovation	ZnO on c-sapphire wafers	Some broken, some still working, fixed in set-up or used for growth
304	Institute for Photonic Technology Jena (D)	Quasi-Multiplex CARS Microscopy with High Frame-Acquisition Rate	Fastlite -	Dazzler pulse shaper RF generator prototype	Components are still at R&D Group
308	CNIT (I)	Integrated time domain optical interleaver for photonic-based full-digital radar receiver	PGT Photonics	Waveguide integrated interleaver	Still working, fixed in set-up, to be used in new experiments.
310	University of Dundee (UK)	Resonator modes in the presence of passive element for conical refraction	Conerefringent Optics	3 laser grade Nd/KGW elements	Components are still working and remain at R&D Group
312	University of Strathclyde (UK)	Adaptive optics for improved resolution in optical sectioning microscopy	Imagine Optic -	GAO prototype	Operational, used in current set-ups

At the end of the ACCORD-project it was decided to transfer the ownership of the existing components to the R&D group involved. A standard letter was written to each R&D group to confirm this transfer.

1.4 Measurement of success of ACCORD-projects:

As set of criteria have been selected to evaluate the submitted project proposals. These criteria also serve partially as a measurement for the success of the ACCORD-projects. Therefore projects are considered as successful if they have met at least 1, but preferably more than one of the criteria:

For the R&D group:	For the Component Supplier:
<ul style="list-style-type: none"> - Scientific value: Publication in Journals or at conferences - Involvement in educational programmes: work and results used in PhD thesis, Master Thesis or Master courses. - New areas of research or access to new components - New collaborative projects as a continuation with the supplier 	<ul style="list-style-type: none"> - New collaborative projects set up as a continuation with the R&D group - Broadening of area of application of the component / broadening of market focus

Based on these criteria, a survey has been set up with both R&D groups as well as the component suppliers. The outcome of these surveys indicate very positive feedback on the ACCORD-project:

- ✓ ACCORD projects score positive on at least 1 or more of the above mentioned criteria
- ✓ ACCORD established new intensive collaborations and low administrative load
- ✓ ACCORD opened new applications for components even with new patents being filed
- ✓ ACCORD collaborative projects continued after ACCORD
- ✓ ACCORD is evaluated by the participants as an overall success
- ✓ ACCORD projects included PhD & Master Thesis work and were incorporated into Master Courses

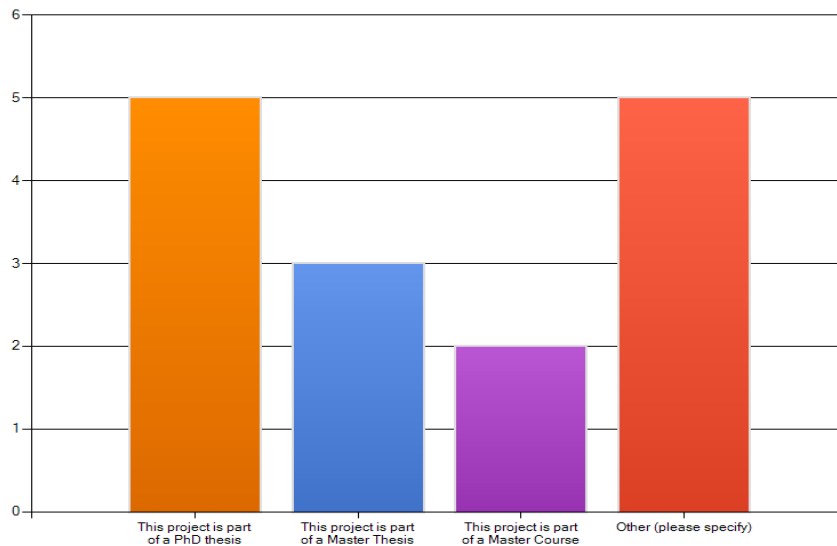
Regarding funding, the clear indication is that this is a programme only achievable through public funding.

Some responses from the survey are depicted below.

1.5 Impact of ACCORD on research in Europe:

8. What scientific output was generated from this project?		Response Percent	Response Count
Journal paper (1)		0.0%	0
Journal papers (more than 1)		60.0%	6
Conference presentation (1) (excluding ACCORD-workshops)		10.0%	1
Conference presentations (more than 1) (excluding ACCORD-workshops)		70.0%	7
Other (please specify)		0.0%	0
<i>answered question</i>			10
<i>skipped question</i>			1

Scientific Outcome of the ACCORD funded R&D projects. In total 14 publications were reported of which 8 explicitly acknowledge the funding by ACCORD.

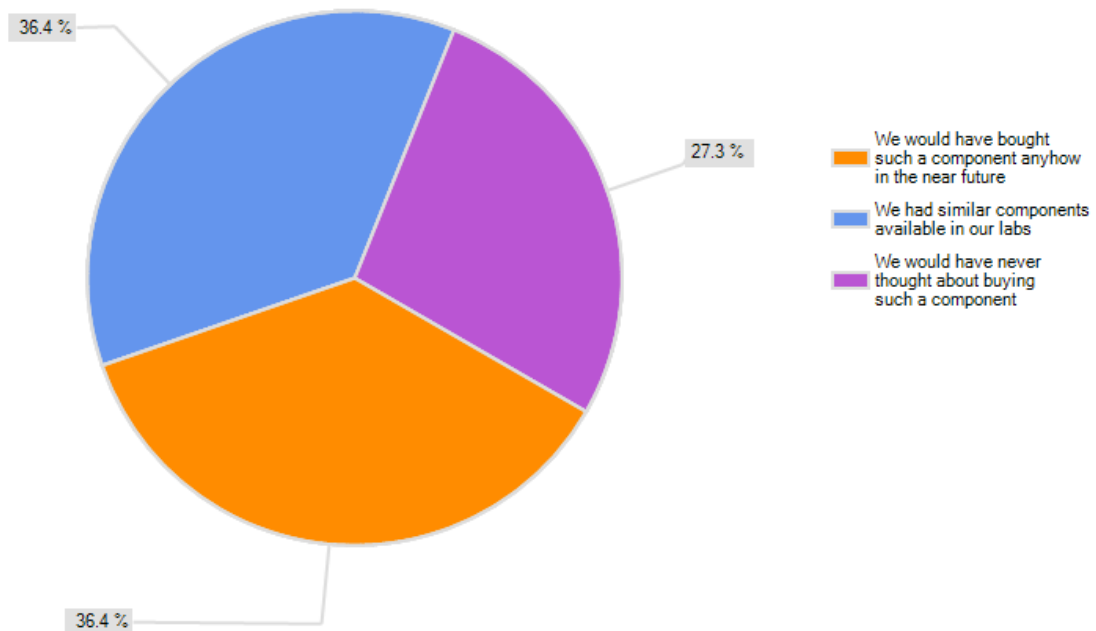


Involvement in educational programmes: work and results from ACCORD funded R&D-projects used in PhD thesis, Master Thesis or Master courses. This clearly illustrates the success of the ACCORD-project to put these pre-competitive cutting-edge components in the hands of young researchers.

2. Did the research carried out on this component within the ACCORD-project cover a new area of research for your group, or was this covering the area in which you are carrying out most of your research?		Response Percent	Response Count
The research involved a new research area we were not active in before		18.2%	2
The research involved work within our main area of R&D activities but we never had access to such a component		63.6%	7
The research involved work within our main area of R&D activities		18.2%	2
Other (please specify)		0.0%	0
answered question			11
skipped question			0

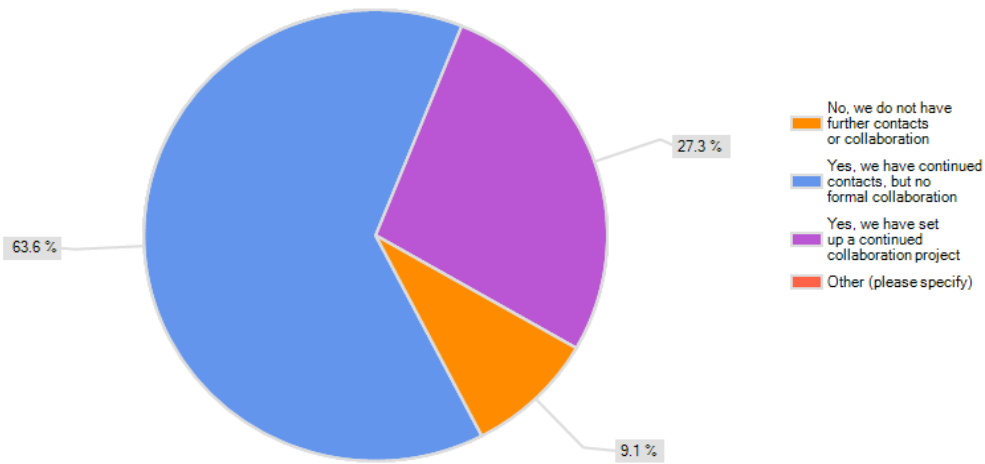
New areas of research or access to new components

ACCORD delivered the component to your group. Would you have bought such a component anyway for your research, or would you never have considered buying this?



New areas of research or access to new components

Did the collaboration with the Supplier continued after the end of the ACCORD-project?



New collaborative projects as a continuation with the supplier

1.6 Impact on the industry in Europe:

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.

- From a bold idea

- to an non-standard project proposal
- with response higher than expected
 - setting up new links SME-R&D
 - involving young scientists
 - generating scientific output & patent
 - resulting in continued collaboration & projects

Citation: *“Accord is a major help for increasing lab/company relations in Europe especially for small companies and startup. Funding through UE and or through national funding is necessary but may be joined with partial funding from the company with in exchange a clear predefined return from the lab (measurements, report, demo etc ...)”*

1.7 ACCORD Contact information & Logo

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

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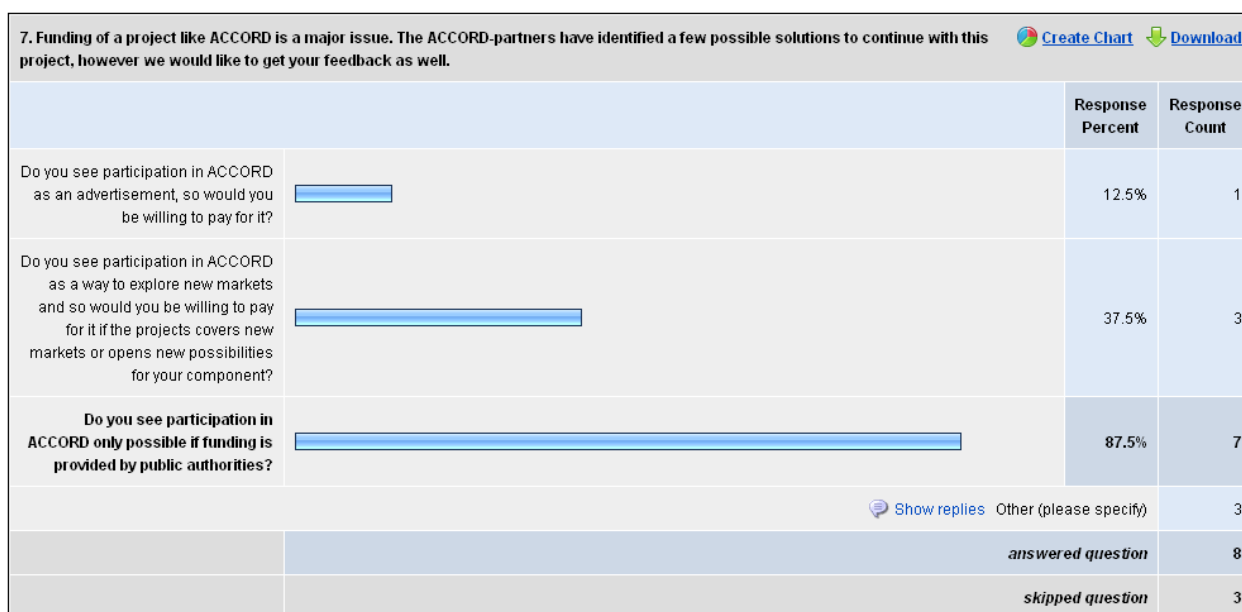
2 Dissemination and use

2.1 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.

2.2 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		

2.3 Engaging with the public

2.3.1 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



2.3.2 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

2.3.3 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

ABOUT US | MEMBERSHIPS | RESOURCES | EXPERTISE AT YOUR SERVICE | NEMO LIBRARY | EVENTS | CAREERS

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.U.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

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2.3.4 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

2.3.5 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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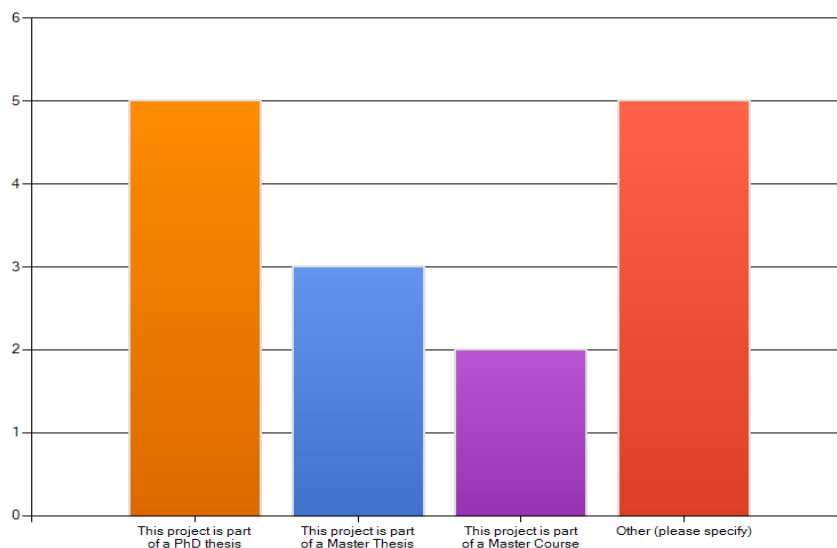
2.4 Publishable results

2.4.1 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.

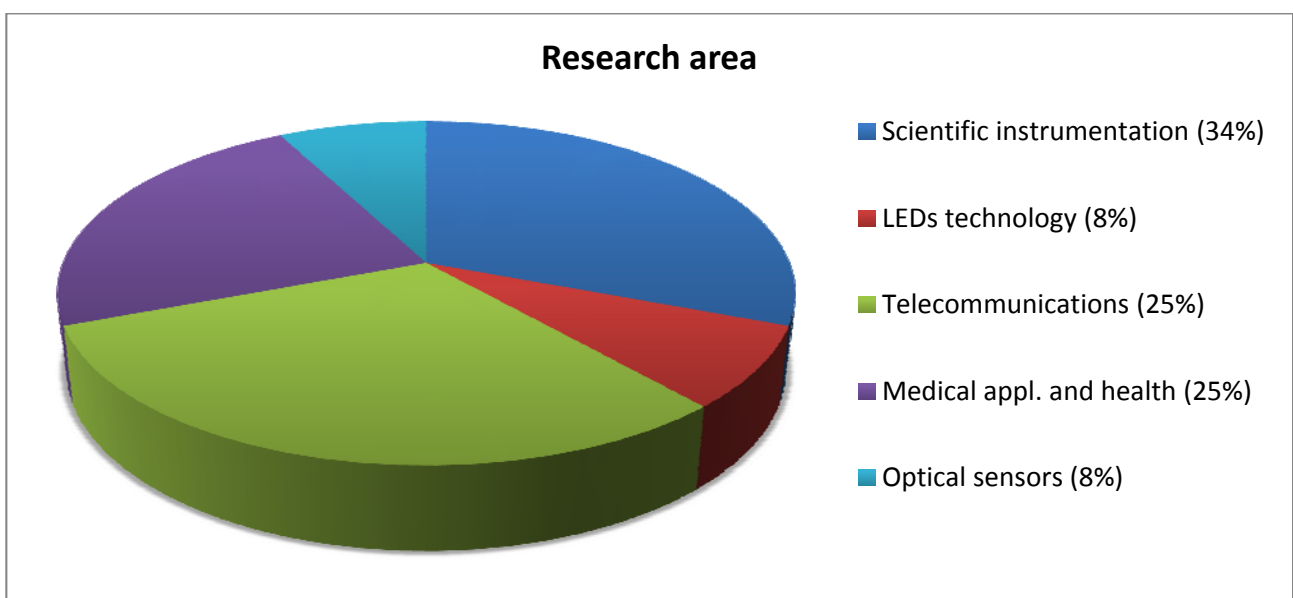
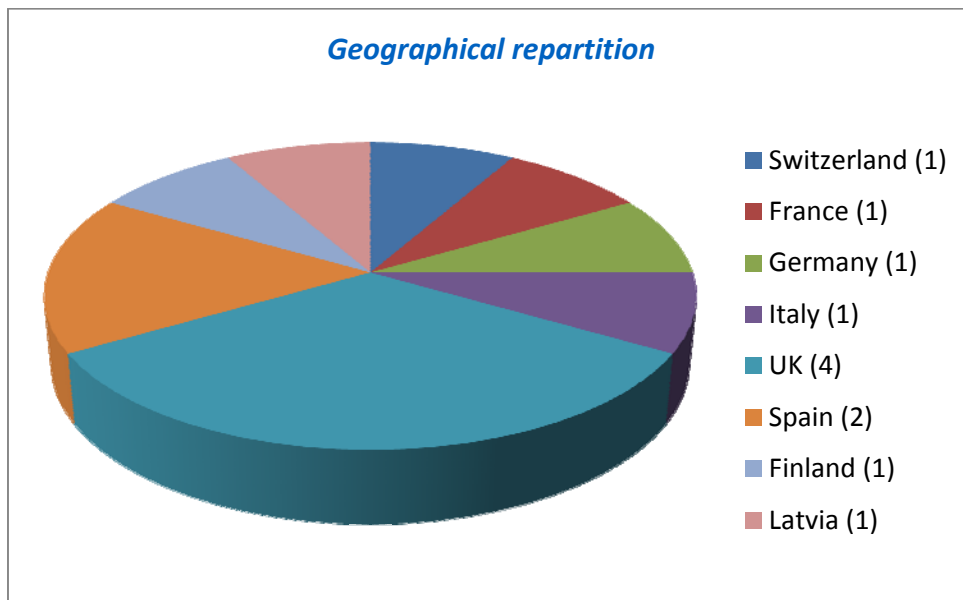


Involvement in educational programmes: work and results from ACCORD funded R&D-projects used in PhD thesis, Master Thesis or Master courses. This clearly illustrates the success of the ACCORD-project to put these pre-competitive cutting-edge components in the hands of young researchers.

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

2.4.2 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.


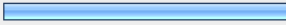

The ACCORD project team works with the highest-ranking proposals to match universities with companies. A negotiation phase enables both parties, the supplier and the R&D group to come to a mutual agreement on how to treat intellectual property during the project. ACCORD then purchases the prototype and 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.

2.4.3 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](#)

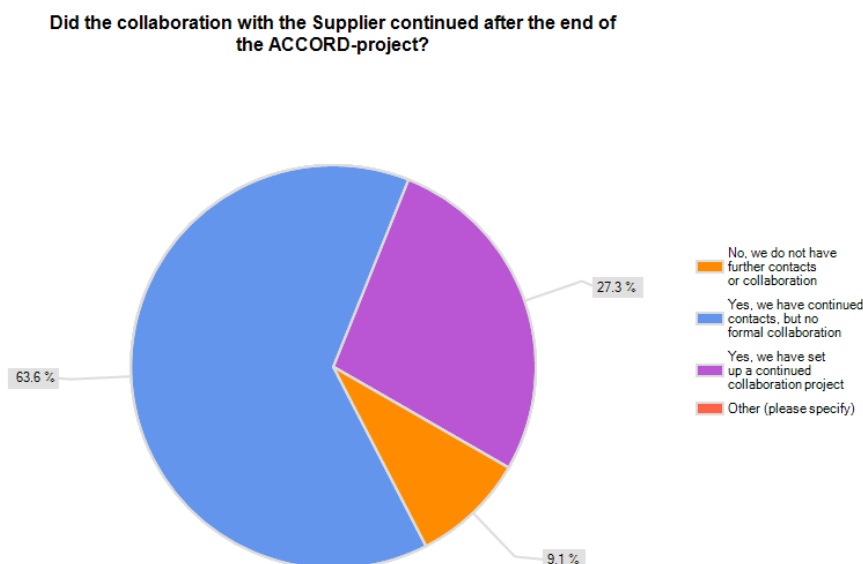
		Response Percent	Response Count
The research involved a new application we did not have in mind before		50.0%	4
The research involved applications the component was designed for, but which we did not cover in our current targets		37.5%	3
The research involved standard applications for our component		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

2.4.4 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.