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Abstract:

This deliverable briefly describes the results of the programme and summarises the feedback from the companies and Universities participating in the programme. It records the interest generated through the number of device offers made and project proposals received and the number of delegates at the public seminars at Exhibitions. Any recommendations from the partners are recorded as guidance for the future.

Keyword list:

Photonic components, Optical components, negotiation of contracts and component fabrication.



Disclaimer

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Table of Contents

DISCLAIMER.....	2
TABLE OF CONTENTS.....	3
1. EXECUTIVE SUMMARY	4
2. INTEREST GENERATED IN ACCORD	5
2.1 COMPANIES	5
2.1.1 Call 1.....	5
2.1.2 Call 2.....	6
2.2 UNIVERSITIES	7
2.2.1 Call 1.....	7
2.2.2 Call 2.....	7
2.2.3 Call 3.....	7
2.3 GENERAL PUBLIC.....	9
2.4 ARTICLES PUBLISHED IN PROFESSIONAL JOURNALS	10
3. FEEDBACK	11
3.1 ICT 2008 LYON EVENT.....	11
3.2 FEEDBACK FROM THE SURVEYS	13
4. RESULTS FROM PROJECTS	14
4.1 PROJECTS FUNDED UNDER THE FIRST R&D CALL.....	14
4.2 PROJECT FUNDED UNDER THE 2 ND R&D CALL.....	15
4.3 PROJECTS FUNDED UNDER THE 3 RD R&D CALL.....	15
5. CONCLUSIONS & RECOMMENDATIONS FROM THE PARTNERS.....	16



1. Executive Summary

This deliverable D5.4 gives a first evaluation of the ACCORD-project, based on the outcome of the Calls and on the feedback obtained at different workshops and through contacts with the collaborating partners and projects.

It briefly describes the results of the programme and summarises the feedback from the companies and Universities participating in the programme. It records the interest generated through the number of device offers made and project proposals received and the number of delegates at the public seminars at Exhibitions. Any recommendations from the partners are recorded as guidance for the future.

This deliverable makes reference and serves as input to WP6.



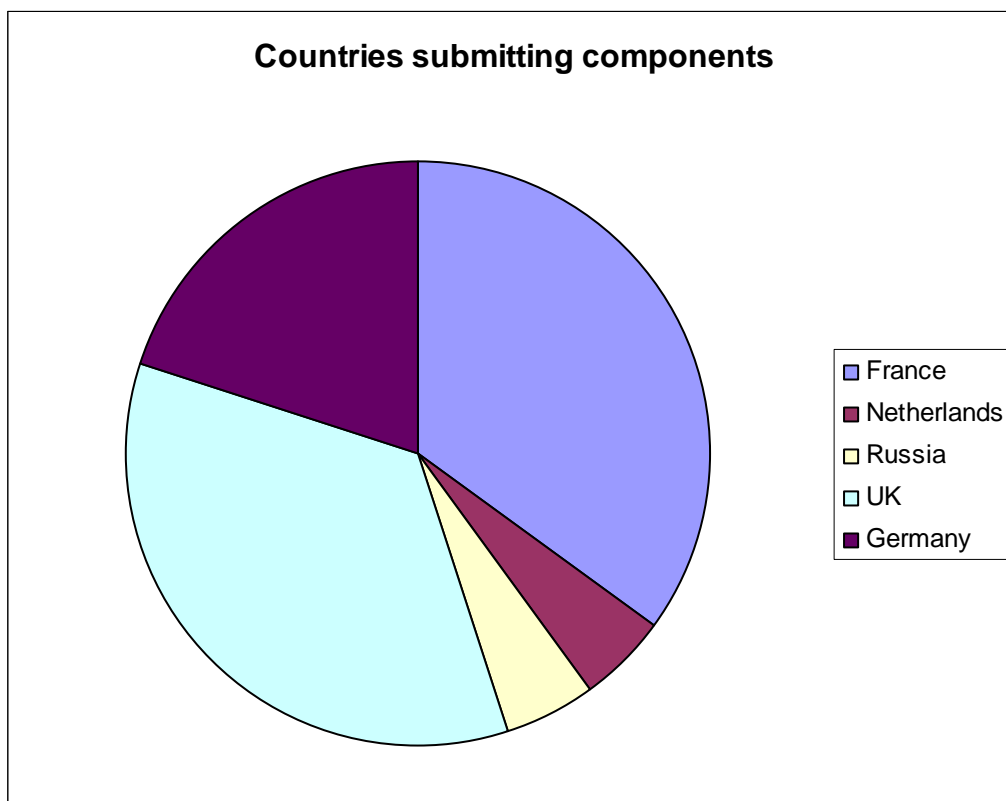
2. Interest Generated in ACCORD

2.1 Companies

There were two calls for components issued on ACCORD

2.1.1 Call 1

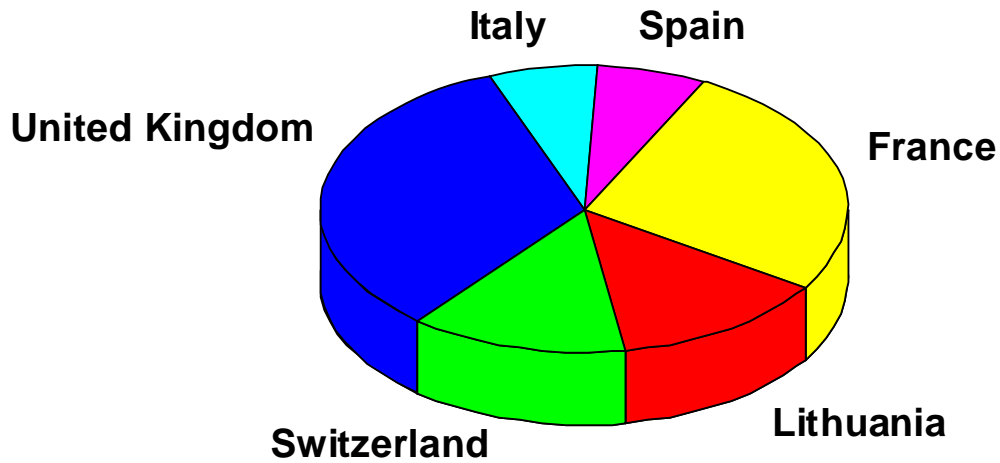
Call 1 opened on 15th January 2007 and closed on 28th February 2007. Twenty components were offered from 5 different countries.



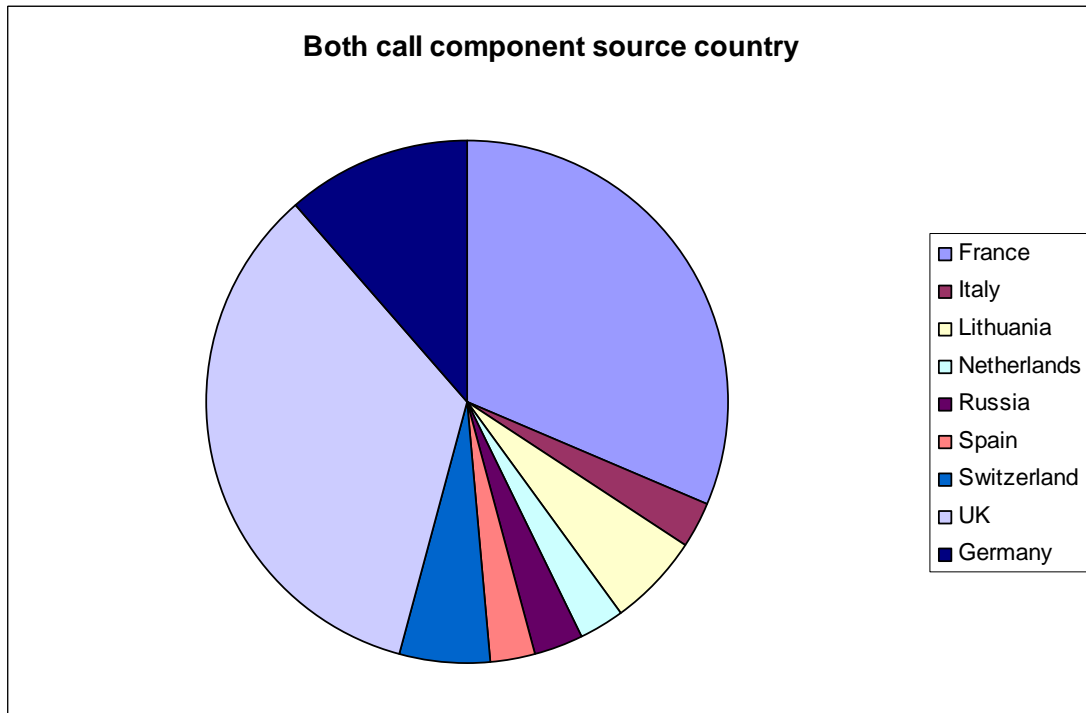


2.1.2 Call 2

Call 2 opened on 1st January 2008 and closed on 31st March 2008. Fifteen components were offered from 6 different countries.



As a result of the two calls 35 components were proposed from 9 different countries





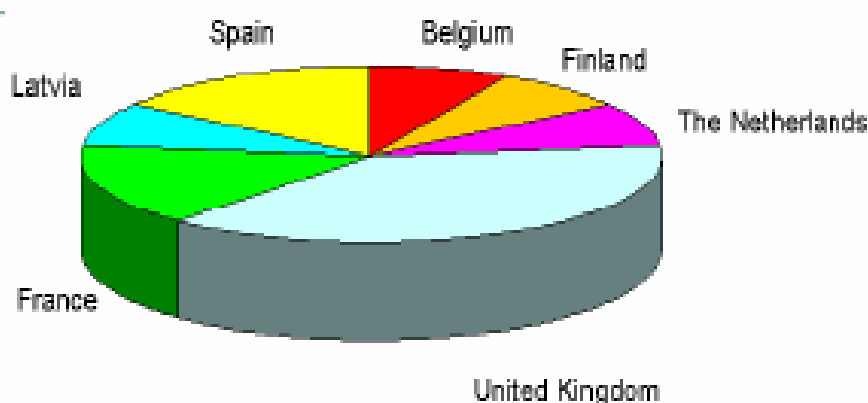
Originally ACCORD proposed to let 10 contracts between companies and universities hence the response was beyond expectations; oversubscribed by 350%. By reallocating project funds the team was able to award 12 contracts. However, the Universities were offered ample choice of components and the ACCORD team were delighted by the response from the companies. There was also a good spread of countries as shown above with the second call providing a more balanced response. However, if placing a subsequent call the team would modify the publicity foci in order to attract companies from European regions which did not participate in the two calls reported above.

2.2 Universities

There were 3 calls for R&D proposals using the proposed components.

2.2.1 Call 1

Call 1 was opened on 12th March 2007 and closed on 30th April 2007 resulting in receipt of 15 proposals from 7 different countries.

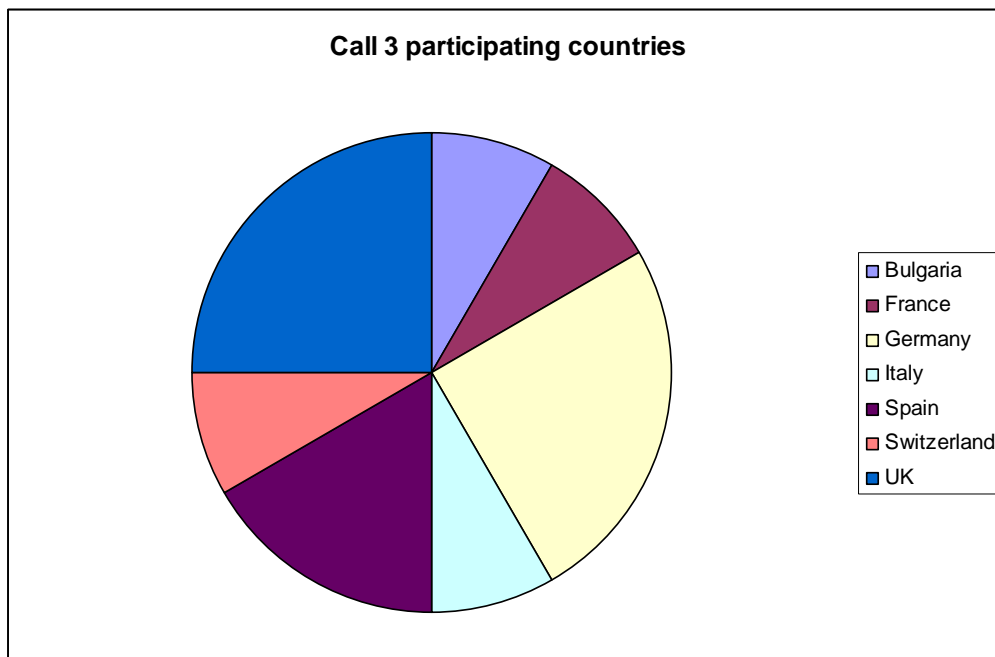


2.2.2 Call 2

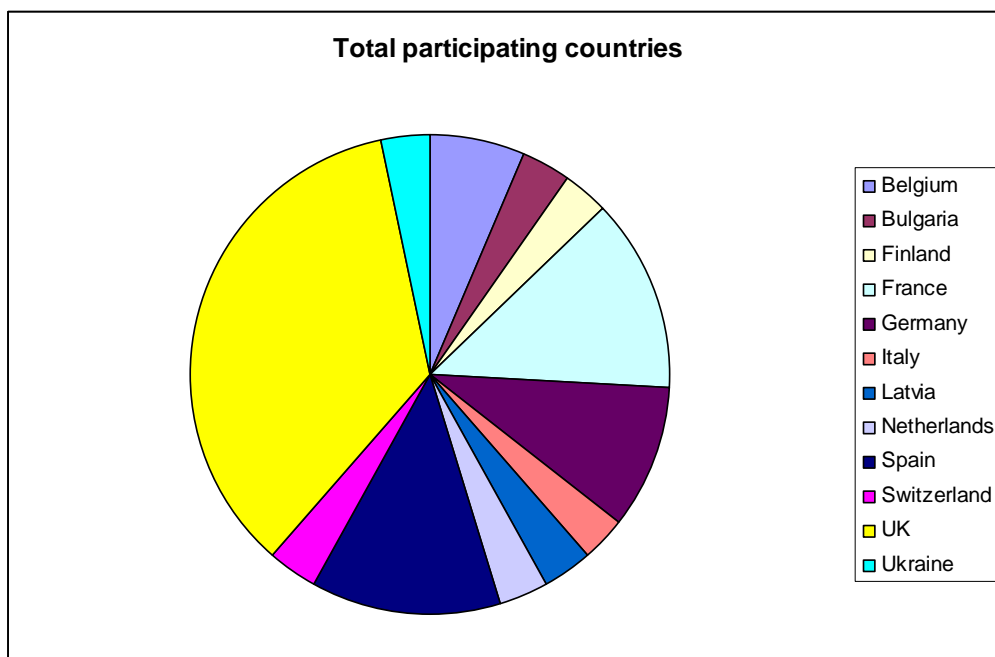
Call 2 opened on 22nd October 2007 and closed on 16th November 2007. Four proposals were received. Three proposals were from UK and one from Belgium.

2.2.3 Call 3

Call 3 opened on 14th April 2008 and closed on 16th May 2008. Twelve proposals were received from 7 different countries.



The three calls resulted in receipt of 31 proposals from 12 different countries.



As with the components offered, the R&D proposals outnumbered the original ten awards contemplated by the ACCORD team by 310%. In addition more countries, 12, were involved.

When the companies and universities are taken together the ACCORD project received 66 offerings from 14 different countries.



2.3 General Public

The ACCORD team disseminated information regarding the project as follows:-

- Website
- Newsletters
- Workshops
- Exhibitions

The web site did not have the facility to record the number of visitors to it. However, there is a facility for those interested in the project to register and be kept informed via the newsletters. In December 2009 90 individuals had registered.

Newsletters were emailed not only to those registered on the ACCORD web site but also to those on the mailing lists of the partners. Newsletters were also distributed at the Exhibitions and workshops described below.

Workshops were held at the events below

EVENT	Date	Attendees
Photonics Europe	April 2008	12
ECOC	September 2008	29
ICT Europe	November 2008	23
Laser, World of Photonics	June 2009	14
Photonics Europe	April 2010	

At the first two events presentations from participating companies and universities were made. At Laser World of Photonics the partners summarised some of the more interesting projects. The workshop at ICT 2008 was designed to gather feedback on ACCORD and also consult the delegates on changes to the ACCORD format which could be incorporated into future project.

The partners rented and manned stands at the following exhibitions, publicising ACCORD and distributing literature.

Photonics West 2007, 2008, 2009 & 2010

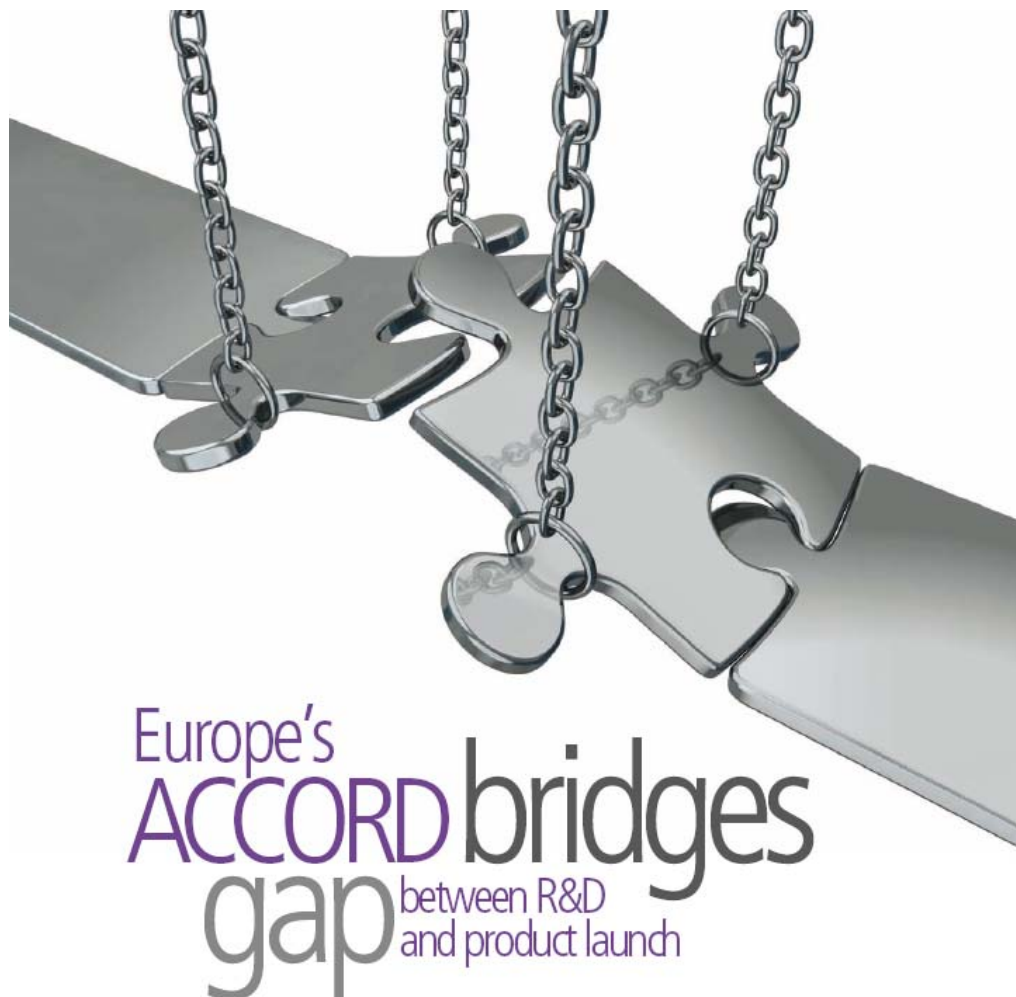
ECOC 2007

Laser World of Photonics 2007 & 2009



2.4 Articles published in professional journals

The interest generated by the ACCORD project has been recognised by professional journals publishing articles. The most prominent article was on ACCORD published by Europhotonics to coincide with Laser, World of Photonics 2009. Europhotonics is read by 11111 throughout Europe.



Europe's
ACCORD bridges
gap between R&D
and product launch

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.



3. Feedback

The project has received feedback from four sources – participating companies and universities and from the general public at workshops; the fourth source is from the surveys of

- i) component suppliers and
- ii) R&D groups.

The letters received from the participating companies and universities have been reproduced in Deliverable 6.1 and hence are not included in this document..

In addition to the feedback from participants the ACCORD team also received feedback from the workshops held at various events.

3.1 ICT 2008 Lyon event

In particular the workshop held during ICT 2008 in Lyon was designed to solicit ideas which could be incorporated into a follow-on project, this gathered the following feedback to the questions posed:-

Should we limit the working area to photonics or might we include complementary fields as opto-mechanics, nanotechnologies, etc

Remarks:

- Broaden to more fields because SMEs are typically working in cross-disciplinary activities
- You need more data. What is the potential if you enlarge scope to a broader arena?
- Interest in bringing SME closer to R&D. Photonics is a multi-disciplinary activity you should include components and systems, too.
- Push cross-border cooperation. International cooperation should be a goal – think about enhancing mobility.
- You should not go too far on subject matter. You could include devices with photonics inside

How can we best sell this exchange platform to regional or national authorities?

- Situation is not easy – need to look at each region individually. There are good practices already working. Find these practices and start here. N°1 show these examples, adopt this model, etc.
- Clusters on photonics in UK were cited, explaining some services offered to members. Focus on clusters with government support. In Belgium, Multitel is the cluster, PCUK, CNOP in France.
- Is there some way to leverage off venture capital investors in SMEs?
- Employment is the key. How many jobs are created? You need data. Training might be a secondary appeal in an economic downturn. Contribution to training cost for SMEs. There was a significant discussion on this point.
- Try to prove profit to the region

**Contacts to make:**

- Poland There are few SMEs, start with universities
- Belgium Ministry of Research and Technology. However, there are elections in June, and these will have an impact on funding. Suggested to contact mirror-group member in Flemish region. This is Hugo Thienpont.
- Romania Many basic infrastructure needs, like roads. Photonics is far down on the list. As in Poland, focus on universities. Stick to fundamental science rather than applications. Maybe too early for an ACCORD-type program.
- Greece Mentioned the Europhos program on photonic systems. Greece is in the 4th European program for Greek development. Photonics is not a priority. Stavros Pissavakis of FORTH is the mirror-group contact

Based on the discussion we had for the former questions, what could be a possible funding model for the programme?

50% matching funds from the Commission, 50% investment from local/national authorities for components manufactured in the region or country.

or

Commission contributes administrative expenses. Local funding used to buy equipment. (Locals pay only when the award is within their boundary).

- UK Go to the venture capital community as a business promotion model. Make a proposal. Cite the 1 laptop per child program
- France The second model could work: that is locals pay only when there is an award within their boundary.
- Poland Basic infrastructure is a big priority. Arguments must be clear and justified for such countries to focus on Accord-like programs
- Local regions make an award if either a university or SME is involved. Show additional return over direct subsidy. The negotiated price is a selling point since this saves money.

We examined the possibility to “match” local funds with commission funds, showing a lever effect. However the commission does not allow this in a project. Any outside funding reduces the commission contribution.

We discussed the Capacities program. In this idea universities perform R&D for groups of SMEs.

Conclusion: Example 1 will probably not work. You really need to aim at something like a Europractice program where the Commission contributes administrative costs, but the exchange would be financed locally



3.2 *Feedback from the surveys*

The complete survey results are to be found in Deliverable D03a

i) Component suppliers

The companies that responded to the survey ALL considered participation in ACCORD had been a success.

Several companies were able to offer new products following the collaboration in ACCORD. Lasting collaborations were established by ACCORD and at least one Patent resulted from the work undertaken.

ii) R&D groups

Again ALL the academics who responded to the survey considered their participation in ACCORD had been a success.

Researchers gained access to components that they would not have been able to access, gained knowledge and produced results which led to new products. A number of projects resulted in researchers writing peer-review papers and presentations at leading conferences.

The majority of respondents to the survey will continue the collaboration established under ACCORD.



4. Results from Projects

4.1 Projects funded under the first R&D Call

R&D proposal	University	Title	Component	Results to date
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	The surface modification of different coatings and polystyrene was tested and reported. Excellent results were gathered especially with TiO ₂ surface. Micromachining of silicon wafer was also tested and reported. The best parameters for laser machining of silicon wafer were found.
108	University of Latvia (LAT)	Adaptive Optics for Eye Physiology Studies	Visionica, Wavefront Sensors	The project, Incorporation of adaptive optics feedback in systems for research into vision science and diagnostics of eye posteriors structures is progressing well.
109	St Andrews University (UK)	Photoporation using fiber tips	Loyalite, Fibre face components	Cell transfection using photoporation via the tipped fibres provided by Loyalite is not feasible However, it is possible that future collaboration with Loyalite and their tipped fibres will transpire in other areas of biophotonics.
112	Universidad Politecnica de Madrid (ES)	Testing and system upgrading	FiberLogix, All-fibre stripper	The system obtained a high level of development, and the performances of the machine has been proved and improved during the project. There remains improvements before introducing the fibre stripping machine to commercial aerospace applications.
113	Universidad Politécnica de Valencia (ES)	Characterisation of Semiconductor Amplifiers and Electroabsorbers and their use in novel applications	CIP, SOA / EA Modulators	Application of SOAs/EAs in: 1) the microwave photonics field, mainly a microwave photonic filter or a phase-arrayed antenna 2) low-cost component in the Access Network.



4.2 Project funded under the 2nd R&D Call

R&D proposal	University	Title	Component	Results to date
203	Strathclyde University (UK)	A multi-wavelength, time multiplexed, spectrometer for atmospheric sensing	Cascade Technologies Ltd	Study of propagation in hollow waveguides with rectangular, square or circular transverse cross-section and made from either fused quartz or alumina has taken place.

4.3 Projects funded under the 3rd R&D Call

R&D proposal	University	Title	Component	Results to date
301	ETH Zurich (CH)	A high throughput terahertz spectroscopic imaging system for security applications	Onefive GmbH	The first terahertz measurements using the prototype component and our new experimental setup was conducted. The software for the measurement control and data acquisition is operable
302	Georgia Tech – CNRS (F)	Development of GaN Based LEDs using ZnO/c-sapphire Templates	Nanovation SARL	Wurtzite InGaN/GaN was successfully grown on ZnO/c-sapphire wafers by MOVPE. Si and Mg doping is under way.
304	Institute for photonic technology Jena (D)	Quasi-Multiplex CARS Microscopy with High Frame-Acquisition Rate	Fastlite	Jena is working with FASTLITE on image quality. The use of photonic crystal fibres with a Stokes pulse generated by a PCF and to use an OPO as pump pulse is being investigated.
308	CNIT (I)	Integrated time domain optical interleaver for photonic-based full-digital radar receiver	Pirelli Labs	The proposed project uses a waveguide integrated optical interleaver of Glass on Silicon technology to obtain a high repetition rate (> 100 Gb/s) optical pulse train to be used for optical sampling operation in a photonic-based full digital radar receiver.
310	University of Dundee (UK)	Resonator modes in the presence of passive element for conical refraction	Conerefringent Optics S.L	We successfully demonstrated a laser based on a conical refraction crystal with a unique self-adapting optical mode.
312	University of Strathclyde (UK)	Adaptive optics for improved resolution in optical sectioning microscopy	Imagine Optic	To understand the most appropriate method of DMM implementation we have made a comparison of a single- v's double-pass configuration. We will look at the level of aberration correction that can be achieved in these two situations.



5. Conclusions & Recommendations from the partners

The ACCORD project has both an operational and an exploratory track. Each track has its own, measurable results.

- On the Operational side the project will demonstrate, through 10 concrete examples, the positive product of enhanced R&D cooperation between industry and universities in Europe.
- On the Exploratory side, the project will develop specific deliverables on the administrative aspects of this initiative that can be used to establish an on-going programme (such as a Europractice programme) that will carry the ACCORD initiative on a self-sustaining basis beyond FP-6.

Operational

The great response to ACCORD from both companies and universities demonstrated the enhanced R&D co-operation between industry and universities. There was the opportunity to place 3 times the number of contracts originally planned if funding had been available. In the event funding was found for two extra projects by reallocating tasks and the associated funds. This response was to a lower number of calls than anticipated, if the team had made the planned number of calls they would have been overwhelmed. There are numerous examples from the projects that collaboration between industry and universities will continue beyond ACCORD funding – a most pleasing result.

The new products identified as a result of ACCORD projects has been beyond our expectation and although companies did not express interest in providing components free to the programme, there was a suggestion that a percentage of sales from components arising from ACCORD projects could be contributed.

Thus the partners highly recommend that the project is continued and extended to include other technologies.

Exploratory

The ACCORD team has benefitted from a great deal of feedback. As a result the deliverable from Work Package 6 (D6.1) details how the team believe the ACCORD project can be perpetuated.

The ACCORD team has also been impressed by the results from the programme. As a result the team submitted a proposal to the Photonics call in FP7 and included in that proposal experience taken from conducting ACCORD.