



EUREKA UMBRELLA PROPOSAL

**EULASNET II**

**EU**ropean **LA**Ser Technology  
and Applications **NE**Twork

(Phase II)



**Action Plan**

**2006-2010**

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## **SUMMARY**

### **1. RATIONALE. MISSION STATEMENT**

- 1.1. WHY CONTINUE THE EULASNET UMBRELLA?
- 1.2. SCOPE AND LEADING OBJECTIVES
- 1.3. MARKET ASSESSMENT

### **2. APPROACH AND METHODOLOGY**

- 2.1. LEADING OBJECTIVES
- 2.2. TARGET GROUPS

### **3. ORGANIZATION**

- 3.1. THE EULASNET II CHAIR:
- 3.2. THE EULASNET II SECRETARIAT
- 3.3. THE EULASNET II STEERING COMMITTEE
- 3.4. THE EULASNET II TOPICAL COMMITTEES
- 3.5. THE EULASNET II WORKING GROUP:
- 3.6. REQUIREMENTS FOR PARTICIPATION IN EULASNET II
- 3.7. CHAIRMANSHIP AND SECRETARIAT FOR THE FIRST TWO YEARS OF EULASNET II

### **4. WORK PLAN**

- 4.1. TASKS DESCRIPTION
- 4.2. TIMELINE

### **5. BUDGET**

- ANNEX I: RESOURCES PRESENTLY AVAILABLE IN THE EULASNET ORGANIZATION**
- ANNEX II: PROVISIONAL CALENDAR OF EVENTS IN MEMBER COUNTRIES**

## **1. RATIONALE. MISSION STATEMENT**

As the successor of EULASNET, the main aim of EULASNET II is to generate EUREKA and other European RTDI projects in specific fields of laser applications by bringing together European competencies in the field of laser technology and assisting European enterprises and research organisations to find suitable partners for innovative, international collaborations.

Concretely, the EULASNET II network will facilitate interactions between industry and research institutions specialising in laser technology and laser-assisted manufacturing; in particular the transfer of research results and technology from academia to industry (emphasis on SME's) for rapid exploitation.

In particular, EULASNET II will assist and develop:

- a European network of competence centres
- close relations between research institutions and industry
- market-driven RTD projects involving industry and research institutes
- partner searches across Europe
- the transfer of technology and expertise
- access to advanced technologies and world class facilities
- access to new regions and markets
- the efficient and sustainable use of existing resources
- cooperation with other relevant European and international research programmes

Under these main commitments, EULASNET II is defined as an Umbrella consistent with the subsidiary objective of strengthening Europe's position on the global market. Upon achievement of a critical mass in laser technology, EULASNET II will be a network enabling collaborations between organisations from all over Europe, and such a cluster of competence is considered as really enabling to increase the competitiveness of the European economy.

### **1.1. WHY CONTINUE THE EULASNET UMBRELLA?**

During the past decades, laser technology has proven to be a highly versatile manufacturing tool for modern, environmentally friendly processes and a key technology for future advanced materials processing. Indeed, despite the relative maturity of industrial lasers, the technology and applications continue to undergo major developments and to move into new areas; with, for example, the emergence of new concepts of high power / high intensity lasers for applications ranging from low noise drilling of concrete in sensitive urban areas (e.g. hospitals) to nano-engineering and ultra high speed cutting of metals for high volume JIT manufacture. It is therefore important that the EULASNET platform be allowed to continue, in order that European manufacturing can take full advantage of the opportunities that these new developments present.

In its final state, the EULASNET Umbrella has brought together representatives of 21 European countries, for some of which the network provides an important international link for transforming their manufacturing base to make it more competitive. Linking this activity to existing initiatives in the production field, EULASNET II will accelerate and optimise the incorporation of promising manufacturing technologies for the development of new processes by the exchange of expertise and know-how and will boost the ability for SME's to adapt the new technologies.

EULASNET has been particularly successful in stimulating the development of national laser networks, but to date not so successful in creating new projects. For this reason EULASNET II introduces a more structured approach to the networking and dissemination within the umbrella, setting goals and delegating activities to a number of working groups, each responsible for specific topics within the scope of the Umbrella.

## 1.2. SCOPE AND LEADING OBJECTIVES

The fundamental leading aim of EULASNET has been the generation of a qualified competence platform for the exchange of knowledge between the participant countries and for the promotion of EUREKA and other RTDI projects in the field of laser technology and applications.

According to the reasons exposed in the previous section, this continues to be the leading aim for the proposed continuation, for which the effective knowledge networking for the different participant countries and the effective promotion of new EUREKA projects based in a deeper level of mutual relations are specially pursued with the proposal of EULASNET II.

From a European strategic point of view, the overall mission goals defined for EULASNET II are:

- To achieve a truly networked European expertise in laser technology
- To maintain the leading role Europe plays in the fields of laser technology research and applications
- To transfer and exploit RTDI results, particularly for the benefit of SME's

From a thematic point of view, reflecting the dynamic character of laser technology and applications, the EULASNET II thematic scope is broad and evolutionary. Nevertheless, to provide an initial reference and illustrate the practical relevance of the topics involved, a (non exhaustive) list of the EULASNET II initial priorities and associate topics for projects generation are summarized in Table I.

**Table I: Summary of initial thematic priorities for EULASNET II**

TYPE OF PRIORITY	ASSOCIATE TOPICS
Market-oriented developments	<p><b>LASER ASSOCIATED OPTICAL TECHNOLOGIES</b></p> <ul style="list-style-type: none"> <li>• Diffractive, refractive, non-linear and adaptive optics for beam shaping, modulation and improving beam quality, extending to higher modulation frequencies, higher spatial resolution and generated wavelength conversion</li> <li>• X-ray and EUV technology: mirrors, coatings, interferometry with nm-resolution</li> <li>• Coupling of diode-lasers: new schemes for higher transfer efficiency and lower costs</li> </ul>
Applied RTD priorities	<p><b>LASER SOURCES</b></p> <ul style="list-style-type: none"> <li>• New, advanced laser media and generating schemes</li> <li>• Laser-plasma X-ray and EUV (extreme UV) sources: higher brilliance, higher efficiency, higher average power</li> </ul> <p><b>LASER INTERACTION AND PROCESSING</b></p> <ul style="list-style-type: none"> <li>• Hybrid processes based on classical and laser processes</li> <li>• Laser bending and high intensity laser forming processes</li> <li>• Advanced high intensity laser processing applications</li> <li>• Laser microprocessing and structuring with sub-wavelength resolution</li> <li>• Laser-assisted nanolithography, micro-reactions and structuring of polymers</li> <li>• Advanced laser surface modification and cleaning processes</li> </ul> <p><b>PROCESS MODELLING, MONITORING AND CONTROL</b></p> <ul style="list-style-type: none"> <li>• Models development for high intensity laser materials interaction in industrial applications</li> <li>• Development of advanced monitoring and on line control strategies for laser processing</li> <li>• Development of laser measurement applications</li> </ul>
Standardization, education and training priorities	<p><b>GENERAL</b></p> <ul style="list-style-type: none"> <li>• Compilation and elaboration of educational material in the field of laser Technology</li> <li>• Development of a European academic network in the field of laser Technology</li> <li>• Academic and technical support for the organization of academic schools in the field of laser Technology</li> <li>• Promotion of local/national events and training sessions in the field of laser Technology</li> </ul> <p><b>STANDARDIZATION</b></p> <ul style="list-style-type: none"> <li>• Promote the standardization of laser characteristics according to ISO related documents</li> <li>• Promote the standardization of laser Safety around Europe</li> </ul>

The priorities listed in Table I include the most promising current areas of research and development around laser and optics technologies and applications from the point of view of high technological impact in European industrial development.

### **1.3. MARKET ASSESSMENT**

The manufacturing activity in Europe represents today approximately 22% of the EU GNP. It is estimated that in total 75% of the EU GDP and 70% of employment in Europe is related to manufacturing. This means that each job in manufacturing is linked to two jobs in manufacturing related services. European manufacturing has great potential as part of a sustainable EU economy, but its success will depend upon continuous innovation in products and processes.

The laser sector, where European industry holds the majority share, has enjoyed an annual growth rate of more than 18% over the past 10 years and has now reached a volume of 2.5 billion.

Examples of markets relevant to laser technology include:

- The automotive sector, where laser technology has been massively introduced in the past 10 years, is now beginning to take full advantage of the maturity of laser technology.
- The aerospace sector, where lasers are used for machining difficult materials (e.g. titanium alloys, carbon fibre composites), where welding is beginning to be qualified for use in fabricating lightweight airframes, and where the potential of laser-assisted deposition and laser shock processing are now being considered.
- The laser job shop sector continues to play an integral part in European manufacture. The SME's are increasingly expanding their range of process capabilities from flatbed cutting and welding to laser surface treatment, laser cleaning, prototyping and micro processing.
- The IT sector, which remains a massive application area for lasers and is characterized by a trend to smaller feature sizes, is utilizing short pulse lasers as photolithographic (e UV) sources.
- The medical equipment sector, where the need for enduring micro marking is increasing the use of laser matrix coding and where key-hole surgical techniques require smaller and more functional components, is driving a burgeoning medical product manufacturing industry that is heavily reliant on laser technology.

It follows that the development of laser technology, from the high power, industrial laser systems to the low power, diagnostic and metrological laser systems, are important for European manufacturing success.

Additionally, even assuming reasonable high level of laser R&D across Europe, the lack of penetration of laser technology into to the key industrial sectors in many European countries needs an active and wide promotion and dissemination of this technology. The industries of many European countries need to undergo a significant transformation; the development and implementation of laser technology can be a key to achieving this.

With the expected participation of laser and optics equipment suppliers, industrial companies acting as leaders in the industrial development sought and research centres providing the effort for the assessment and development of applications, such industrial penetration of laser technology can be envisaged.

## **2. APPROACH AND METHODOLOGY**

EUREKA calls for a bottom-up strategy. Accordingly, the Umbrella members and partners will define their research priorities on the basis of real market needs in close contact with enterprises active in the field, thereby maximising the likelihood that applied research reaches the market.

### **2.1. LEADING OBJECTIVES**

The defined overall mission of EULASNET II will be accomplished by meeting the following objectives:

1. To actively assist and encourage industrial partners in the participating countries in preparation of projects
  - By collaborating with national authorities for the effective projects funding
  - By defining possible projects and partnerships
2. To provide an effective gateway for knowledge and expertise dissemination
  - By providing an agile platform for partner search
  - By presenting members' activities through relevant channels (laser exhibitions, success stories ...)
3. To map capabilities of network members and other European organisations
  - By updating the SWOT analysis for the different participating countries
  - By mutual exchange of information by institutions of the different participant countries
  - By developing benchmarking activities between these institutions
4. To address the problems and demands of the European industry in order to improve its position on the global market
  - By promoting focused discussions on key technical fields and industry sectors
  - By performance of world-wide state-of-the-art analyses in the different subfields of application of laser technology
5. To promote the structuring of laser technology applications space across Europe
  - By promoting the consolidation and installation of national LASNET networks directly coupled to EULASNET
  - By active cooperation with existing national structures
6. To promote the collaboration with other relevant actors and actions in the fields of Optics, Manufacturing, Materials and other relevant fields
  - Other EUREKA Umbrellas and Clusters
  - EU Framework Programme especially ERA Nets and Technology Platforms
  - Other European (e.g. ESF, COST) and international initiatives (e.g. IBEROEKA)

### **2.2. TARGET GROUPS**

Improvements in laser technologies are relevant for many industrial sectors including the aerospace, automotive, engineering, construction, biomedical, textile, optical and microelectronics industries. Smaller institutions and SME's will especially benefit from a network providing RTD resources.

The target groups for the development of EULASNET II will include laser producers as well as potential users in all fields of laser applications.

An extra value for the project will be obtained through the joint work with the stakeholders of confluent EUREKA Umbrellas and other RTDI structures (Technology Platforms, ERA Nets, etc.).

### **3. ORGANIZATION**

The EULASNET management has comprised a Chair, a Secretariat and a Working Group. For the proposed EULASNET II Umbrella, a Steering Committee will be introduced to help drive the activities of the network and better engage the participating nations, and a series of Topical Committees will be created with the specific mission of developing specific actuation lines in the frame of EULASNET II.

#### **3.1. THE EULASNET II CHAIR**

The EULASNET II Chair will play a central and active role in proposing new activities, strategies and priorities of EULASNET II. The Chair will co-organise and chair the meetings of the EULASNET II Umbrella; and the country holding the EULASNET II Chair will be the EUREKA Main Contact Country for EULASNET II.

#### **3.2. THE EULASNET II SECRETARIAT**

The EULASNET II Secretariat will work in close cooperation with the EULASNET II Chair. It must support the EULASNET II organisation and serve as general EULASNET II information point: It will take care of the EULASNET II website and secure a close link to the EUREKA Secretariat.

#### **3.3. THE EULASNET II STEERING COMMITTEE**

The EULASNET II Steering Committee will be integrated by the Chair, the Secretariat, and a number of committed members designated by the Chair. This committee will assist the Chair in the network steering.

The mandate of the EULASNET II Steering Committee will be:

- To discuss and assess the progress of the EULASNET II network and if necessary suggest changes and update the Action Plan.
- To discuss and approve all major changes within EULASNET II
- To prepare an annual progress report and possible specific requests to the EUREKA NPC group
- To ensure, through an active participation of its members, the efficient work of the newly defined Topical Committees. Additionally to suggest and approve the creation of new ones or the suppression of some of them.

#### **3.4. THE EULASNET II TOPICAL COMMITTEES**

The Topical Committees will be newly created as working entities in charge to develop specific action lines of action consistent with the EULASNET II objectives. Initially, they will be extracted from the working group through the nomination of interested participants.

The need for a Topical Committee on a particular subject or for a concrete action line can be proposed and approved at any time by the members of the Steering Committee. At present, the subjects and action lines considered to deserve the creation of a Topical Committee in order to facilitate the progress of EULASNET II towards the reaching of its objectives, are:

- i) Mapping of European expertise and needs in laser technology and applications
- ii) Promotion and dissemination of laser technology through a coordinated e-network
- iii) Coordination of EULASNET II activities to other European RTDI networks
- iv) Evaluation of new and emerging scientific and technological topics in laser technology
- v) Development of standardization, education and training initiatives in laser technology

### **3.5 THE EULASNET II WORKING GROUP:**

The EULASNET II working group is ideally made up of a public representative (in some cases belonging to the national EUREKA organization) and a sector representative of each participating country. The experience shows the convenience of having a scientific-technical representative as NCE. At the national level the two representatives form a team, ensuring the national organisation and promotion of EULASNET II activities. A regular monitoring of national R&D parameters will be carried out.

The mandate of the EULASNET II working group will be:

- Project generation
- Project monitoring
- Partner search
- Relations to other initiatives in the field of laser technology
- Promotion of EULASNET II
- Common activities

The EULASNET II network meetings focus on project related matters and on the practical realisation of actions defined in the Action Plan. The EULASNET II network will meet twice a year to discuss how the EULASNET II Umbrella is progressing as compared to the objectives set up in the Action Plan and suggest changes whenever necessary.

The main goals for these meetings will be:

- exchange of information on national priorities, funding opportunities, activities
- insurance of network-wide support for specific activities
- discussion of the project progress
- discussion and promotion of new initiatives

### **3.6. REQUIREMENTS FOR PARTICIPATION IN EULASNET II**

While maintaining a flexible and pragmatic approach to accommodate the available resources in the member states, the efficiency of the network is dependent on a minimum level of commitment and shared responsibility from its members.

Membership of EULASNET II will require commitment to participate and actively contribute to the following activities:

- Generation and promotion of a minimum number of proposals and projects
- Regular participation in network meetings
- Promotion of EULASNET II nationally
- Identification of potential national experts
- Willingness to host EULASNET II meetings depending on resources

All Member States should cover their own expenses in connection with the participation in EULASNET II (manpower, incl. national experts, promotion, travel experts, etc.)

### **3.7. CHAIRMANSHIP AND SECRETARIAT FOR THE FIRST TWO YEARS OF EULASNET II**

The EULASNET II Chairmanship and Secretariat will be hosted by Spain during the first two years (2006-2008) of the proposed continuation (2006-2010). At the end of this period, a decision will be made about the continuation or transfer of these responsibilities for the remaining two years of EULASNET II.

An schematic drawing of the working structure conceived for EULASNET II is represented in Figure 1

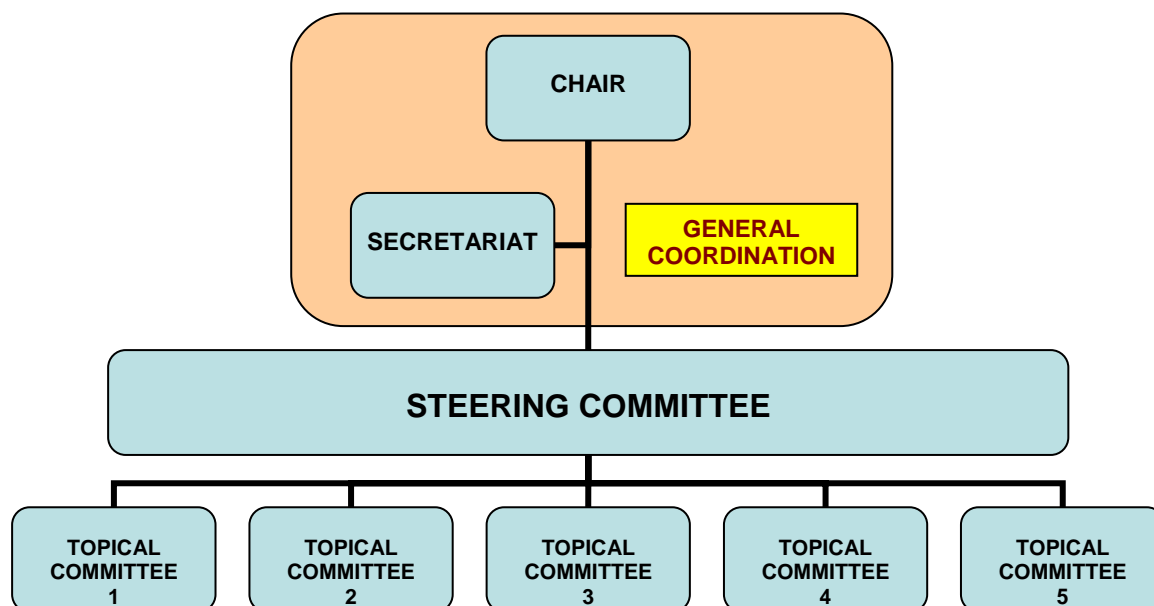


Figure I. Working structure envisaged for EULASNET II

#### 4. WORK PLAN

In line with its defined objectives, a set of tasks and activities have been agreed within a coordinated work plan.

Those action lines with a particularly strategic importance for EULASNET II will be coordinated within a newly defined Topical Committee, which will act under the direct supervision of the EULASNET II Steering Committee and will be in charge of addressing the corresponding topic and contribute the expected deliverables.

For the present stage of the proposed Action Plan and consistent with the EULASNET II objectives, the Work Plan is structured according to the main action lines listed in Table II.

Table II. Main Action Lines proposed for EULASNET II

Action line	Description
I	Active generation and promotion of EUREKA Projects in the frame of EULASNET II
II	Development of national networks in laser technology and applications
III (T)	Mapping of European expertise and needs in laser technology and applications
IV (T)	Promotion and dissemination of laser technology on the European market
V (T)	Coordination of EULASNET II activities to other European RTDI networks
VI (T)	Evaluation of new and emerging scientific and technological topics in laser technology
VII (T)	Development of standardization, education and training initiatives in laser technology

The development of the action lines marked with (T) will be strengthened through the creation of Topical Committees responsible for achieving specific objectives. For the remaining action lines the complete EULASNET II working group will be actively involved.

#### **4.1. TASKS DESCRIPTION**

The following paragraphs present the individual targets and tasks description for the above mentioned action lines.

<b>I. Active generation and promotion of EUREKA Projects in the frame of EULASNET II</b>
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**a) Envisaged Targets**

- I.1 The generation of new EUREKA projects in the frame of EULASNET II is considered as the main objective for the whole Action Plan. A minimum objective of 5-10 EUREKA Projects generated per year is envisaged, a higher number being clearly desirable.
- I.2 The promotion of EULASNET II in the different participating countries as a main frame for European cooperative projects in the field of laser technology and applications.

**b) Main tasks to be accomplished**

- I.1. Active and prospective work of search for new ideas for EUREKA projects in close connection with scientific, technological and market agents; also in cooperation with other European structures promoting cooperative research
- I.2. Programming and realization of brokerage events for projects partnerships definition
- I.3. Effective assistance to members and partners in the preparation of projects

<b>II. Development of national networks in laser technology and applications</b>
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**a) Envisaged Targets**

- II.1 The establishment in each participating nation of a coordinated market-oriented network of competence in the field of laser technology and applications, by the creation of new and/or by the strengthening of existing national networks.

**b) Main tasks to be accomplished**

- II.1. Promotion of stable relations between companies and research institutions in the field of laser technology and applications
- II.2. Promotion or strengthening, at the national level of each participant country, of a market-oriented competence network in the field of laser technology and applications
- II.3. Organization and support, at the national level of each participant country, of an e-LASNET network (BELASNET, HULASNET, LITHLASNET, POLLASNET are already existing examples) coordinated to EULASNET II as an effective means of laser technology promotion and dissemination.

<b>III. Mapping of European expertise and needs in laser technology and applications</b>
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**a) Envisaged Targets**

- III.1. Production of a report on industrial needs and matching with the European research, technological development and innovation competences in the field of laser technology and applications.

**b) Main tasks to be accomplished**

- III.1. Thematic analysis and generation of competence database on European and by country competencies in the field of laser technology and applications
- III.2. Review of SWOT analysis on European and national competencies in the field
- III.3. Organization of workshops to benchmark national developments in the fields

**IV. Promotion and dissemination of laser technology on the European market**

**a) Envisaged Targets**

- IV.1. To succeed in presenting laser as a truly enabling technology able to lead innovative solutions for industrial applications, particularly for SME's.
- IV.2. To bring together the industrial customers and technology providers for the setting up of collaboration between industry and research partners
- IV.3. To succeed in disseminating the important number of available results on laser applications to related companies and sectors

**b) Main tasks to be accomplished**

- IV.1. Promotion of an e-based sub-platform for partner search and presentation of member activities
- IV.2. Establishment/optimization of dissemination and promotion procedures of laser technology with special attention to SME's
- IV.3. Assistance to the installation and coordination of national e-LASNET networks
- IV.4. Active development of promotion and dissemination activities at the local level by the members, using at their maximum availability the new or pre-existing national e-LASNET networks and the national/governmental bodies
- IV.5. Setting-up of up-to-date laser technology and applications promotional material
- IV.6. Publication and promotion of local or European success stories

**V. Coordination of EULASNET II activities to other European RTDI networks**

**a) Envisaged Targets**

- V.1. Promote/continue a fruitful and mutually beneficial collaboration with other European RTDI networks
- V.2. Promote a cross fertilization of EULASNET II with other European RTDI networks for the constant updating of market expectations, technical knowledge and funding opportunities for projects and initiatives

**b) Main tasks to be accomplished**

- V.1. Maintenance of a permanent prospective activity to identify new programmes, funding opportunities and market expectations relevant for EULASNET II
- V.2. Maintenance of regular relations with related networks, platforms and organizations for the identification of new common interest collaboration activities (other EUREKA Umbrellas, EU Framework Technology Platforms, ERA Nets, other European (e.g. ESF, COST) and international (e.g. IBEROEKA) initiatives) to identify new collaboration activities of common interest.

**VI. Evaluation of new and emerging scientific and technological topics in laser technology**

**a) Envisaged Targets**

- VI.1. To provide a permanent basis for knowledge updating in the field of laser technology and applications, especially for emerging market oriented applications
- VI.2. To maintain a permanent prospective activity taking care of relevant breakthroughs in the considered field possibly involving major revolutions in the laser applications market

**b) Main tasks to be accomplished**

- VI.1. Development of a systematic retrieving activity aiming the effective updating and allocation in the appropriate database of industrially relevant new issues in the field

- VI.2. Development of a systematic prospective activity against possible industrially relevant scientific-technologic breakthroughs in the field
- VI.3. Topical presentation of results from retrieving and prospective activities to the EULASNET II working group

<b>VII. Development of standardization, education and training initiatives in laser technology</b>
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**a) Envisaged Targets**

- VII.1. To provide a basis and develop the appropriate procedures for the increasing standardization of laser technology applications, especially in the fields of laser safety and definition/verification of laser characteristics.
- VII.2. To contribute to the definition, along with the lines provided by the European Education Space, of educational programs in the field of laser technology and application at the different levels required by the industry; this comprises also the implementation of such programs at universities, schools of engineering and technical schools.
- VII.3. To provide a permanent basis for the update of the scientific-technological knowledge in the field of laser technology and applications applicable to education and training programs

**b) Main tasks to be accomplished**

- VII.1. Setup and/or adaptation (from existing norms) of standardization procedures applicable to laser applications centres and involved industries, especially in the field of laser safety and active promotion of standardization procedures in the industry (through the working group members)
- VII.2. Compilation and elaboration of educational material in the field of laser technology and applications helping the development of a European academic network in the field of laser technology
- VII.3. Promotion of local/national events and training sessions in the field of laser technology

#### **4.2. TIMELINE**

The timeline envisaged for the development of EULASNET II starts June 2006 and ends June 2010 (4 years duration).

Provided that EULASNET II is formulated as the natural continuation of its predecessor EULASNET, no definition phase is considered as necessary, the full development period being considered as implementation phase

The accommodation of the action lines during this period is fundamentally linear (i.e. all the foreseen activities are considered to be extended over the four years of duration). However, according to the progressive implementation of procedures and achievement of project results some milestones and remarkable dates can be defined along this period:

1. Organization of Working Group meetings (approximately in June and November of each year)
2. Initial setup of database summarising the state-of-the art of laser technology expertise and needs across Europe (for Working Group meeting of spring 2007)
3. Presentation of an updated SWOT analysis on laser technology in Europe and the participating countries (Working Group meeting of fall 2007)
4. Setup of national e-LASNET networks (ideally at the end of 2007)
5. Setup of EULASNET II network as a coordinated network of networks (end of 2008)
6. Setting-up of up-to-date laser technology and applications promotional material (end of 2007)

7. Presentation of updated and prospective reports on new and emerging developments on laser technology and applications (Working Group meetings)
8. Presentation of compiled/standardized EES-oriented educational material on laser technology and applications (end of 2008)
9. Presentation of a basic set of standardized procedures in the field of laser technology and applications for the consideration of European normative bodies (end of project, 2009)
10. Organisation of and participation in academic, technical, promotional and dissemination events (according to list of events prepared on the basis of the contribution of the participant members).

## **5. BUDGET**

The final EULASNET II budget will be calculated on the basis of the final number of participant countries.

Fixed allocations will be needed for the Chair and Secretariat missions and additional allocations will be needed for organization of working group and committees meetings as well as for travelling and personnel costs.

**ANNEX I: RESOURCES PRESENTLY AVAILABLE IN THE EULASNET ORGANIZATION**

**1. General Internet portal**

<http://www.eulasnet.org>: Home  
News  
Mission  
Participants  
Running projects  
Partner search  
Submit your idea  
EULASNET projects  
EUREKA portfolio  
IRC database  
CORDIS market  
FP6  
COST  
Career  
Event calendar  
Links & Downloads  
EULASNET meeting  
Member area  
Contact

**2. National EULASNET connected networks:**

BELASNET: <http://www.belasnet.be>  
LITHLASNET: <http://www.bit.ac.at/eulasnet/LITHLASNET>  
HULASNET: <http://www.ddkkk.pt.e.hu/hulasnet>  
POLLASNET: <http://www.pollasnet.org.pl>

**ANNEX II: Provisional Calendar of Events in Member Countries (continuous update)**

**AUSTRIA**

1. Int. Conference on Gas Flow and Chemical Lasers (GCL; Gmunden, September 2006)

**LITHUANIA**

1. Int. Conference on Advanced Optical Materials and Devices (AOMD-5; Vilnius, August 2006)
2. LON-2008 workshop (Lasers and optical nonlinearity, October 2008)

**POLAND**

1. Annual Conference/Exhibition OPTOELEKTRONIKA (June 2006)
2. Symposium of laser Technology – to be held in 2006 and 2009
3. POLLASNET workshops (April/May 2006 + EULASNET II WG, October 2006, twice in 2007)

**ROMANIA**

1. Romanian Conference on Optics (ROMOPTO; August 2006)
2. International Conference on Advanced Laser Technologies (ALT, September 2006)
3. International Symposium on Optoelectronics (SIOEL; to be fixed)

**SPAIN**

1. LASERAP 2006 (Summer School on Laser Technology and Applications; September 2006)
2. HISPLASNET workshop (November 2006 + EULASNET II WG)

**UK**

1. Fibre laser technology and applications (March 2006)
2. Micro and nano production by laser (June 2006)
3. Job shop business workshop (June 2006)
4. Photon 06 Conference (September 2006)
5. Special laser cutting (September 2006)
6. Laser processing of polymers (November 2006)