MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD

CDTI Centro para el Desarrollo Tecnológico Industrial

Departamento Programa Marco de I+D

European Commission

FP-ICT WP 2013
Call11: Photonics

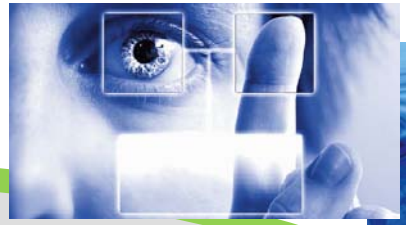
CIP-ICT WP 2013
Call 7: Biophotonics

Thomas Skordas

Head of the Photonics Unit
DG CONNECT, European Commission

EU in Action
Photonics Research and Innovation
ICT FP7: 2007-2013

Data Communications



Safety & Security

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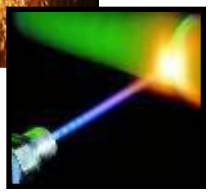
Lighting & Displays

~ 500 M€ of EU funding
> 100 R&D Projects

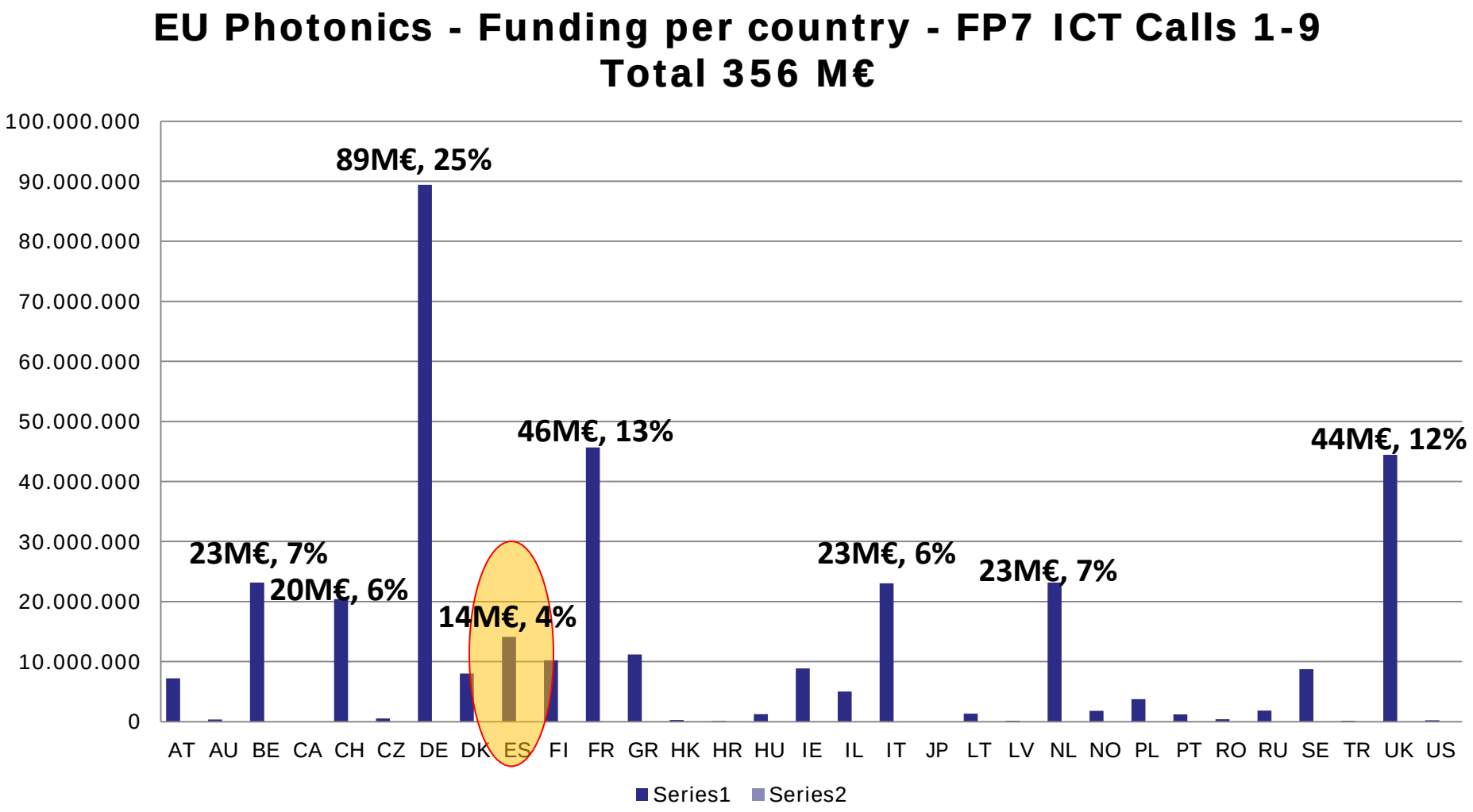
Manufacturing



Biophotonics

Organic Photovoltaics

Spanish Participation in ICT FP7
Photonics R&I



FP7 and CIP -ICT WP 2013
Photonics and Organic Electronics

An Overview of Calls for proposals

ICT Obj. 10.1
"EU-Japan research and development cooperation"

Photonics:
1,5M€ of 9M€
One STREP (Optical communications)

Call EU-Japan
DDL
29 Nov 12

PPP FoF Obj. 7.2
"Equipment assessment for sensor and laser based applications"

15-20 M€
of 33.5 M€

Call FoF
DDL
4 Dec 12

ICT Obj. 3.3
"Heterogeneous Integration of KETs"

Photonics + OLAE:

20-25 M€
of 64 M€

ICT Obj. 3.4
"Advanced computing, ... systems"

Optical interconnect in target outcome a)

Photonics:
Part of IP

Call 10
DDL 15 Jan 13

ICT Obj. 3.2

"Photonics"

61M€

Call 11
DDL
16 Apr 13

CIP – ICT PSP Obj. 3.5
"Biophotonics solutions for diagnosis, monitoring and treatment of diseases"

10M€

CIP-Call 7
DDL
14 May 13

Photonics in ICT WP 2013
Obj. 3.2 - An overview

61 M€

ICT Call 11
DDL: 16 APR 13

- **ICT Objective 3.2 Photonics**
  - a) Application-specific photonic devices
    - i. Optical data communications
    - ii. Solid-state lighting
    - iii. Lasers for industrial processing
  - b) Cross-cutting technologies for a wide range of applications
    - i. Integration technologies for PICs
    - ii. Cost-effective assembly and packaging technology
  - c) Technology take-up and innovation support
    - i. Access services for SMEs
    - ii. Coordination and support actions fostering innovation in SSL
    - iii. Other coordination and support actions
  - d) ERANET-plus action

- Advance the SoA of photonic devices and develop advanced products
- Proposals to be driven by application requirements
- Demonstrate strong industrial commitment!
- Address the supply chain

STREP 42 M€

IP 8 M€

CSA 7 M€

EN+ 4 M€

Photonics in ICT WP 2013
ICT Objective 3.2 & Optical Data Communications

a) Application-specific photonic devices

- **a) i) Optical Data Communications**
  - Photonic devices for future networks with increased flexibility, bandwidth, energy efficiency and cost effectiveness

Focus is on:

STREP

- Devices for fully converged optical networks allowing several bitrates, modulation formats and/or radio standards on the same infrastructure
- Devices for flexible, dynamic optical networks coping with varying traffic demands, possibly including quality of service management at the optical layer

Proposals should involve device manufacturers, suppliers of communication equipment and network operators

Photonics in ICT WP 2013
ICT Objective 3.2 and SSL

a) Application-specific photonic devices

- **a) ii) Solid-State Lighting (SSL)**
  - **OLED: Large-area, large uniformity OLEDs for general lighting with increased lifetime and brightness**
  - **SSL lamps and modules with added intelligence: high performance, reliable, low-cost**

STREP

➔ **Proposals should address end-of-life / disposal / recyclability issues**

Proposals should involve SSL manufacturers and / or suppliers

Photonics in ICT WP 2013
ICT Objective 3.2 & Laser-based industrial processing

- **a) iii) Lasers for industrial processing**
  - Short and ultra-short (below 10 ps) pulsed laser sources for high speed surface processing or for cutting at micro or nanometre precision
    - Average output power above 200W
    - High conversion efficiency
    - High repetition rate

STREP

➔ Proposals may include the necessary optical elements for beam delivery, guiding and shaping

Proposals should involve laser device and equipment manufacturers and end users

Photonics in ICT WP 2013

ICT Objective 3.2 & Cross-cutting photonic technologies (1)

b) Cross-cutting technologies for a wide range of applications

- **b) i) Integration technologies for Photonic Integrated Circuits (PIC)**

STREP

Aim is:

- **Enhanced capabilities such as integration density, functionality, performance**
- **through the use of innovative materials, nanophotonics or other new functional structures**

➔ **Proposals may include heterogeneous integration based on wafer processing technologies**

Proposals should involve photonic device manufacturers

Photonics in ICT WP 2013

ICT Objective 3.2 & Cross-cutting photonic technologies (2)

b) Cross-cutting technologies for a wide range of applications

- **b) ii) Cost-effective assembly and packaging technologies**

STREP

Aim is:

- **cost-effective assembly (including in particular hybrid optical integration) and packaging technology**
- **by addressing related thermal, electrical and mechanical challenges and fabrication technology**

Proposals should involve photonic device manufacturers and fabrication tool suppliers

Photonics in ICT WP 2013
ICT Objective 3.2 - c) i)

3.2 – c) Technology take-up and Innovation support

IP **Up to 8 M€**

i. Access services enabling wider adoption and deployment of photonics technologies in innovative products

- *Fast and efficient* Services in particular aimed for SMEs.
- Driven by concrete business needs
- Services best span the full innovation cycle and eco-system.
  A wide range of services could be included.
  Examples: training, feasibility studies, prototyping, design or engineering services, access to tools and equipment, etc.

One stop shop approach

Partnership is defined in the proposal

Consortia should have high quality providers of technology/services covering the innovation cycle/supply chain.

SMEs do not need to be beneficiaries of the grant agreement for receiving access services

Actors like innovation clusters, technology transfer centres may participate

➔ **See also dedicated workshop of 20 June 2011**

- **Agenda & presentations:**
  http://cordis.europa.eu/fp7/ict/photonics/workshop-sme20062011_en.html
- **Final workshop report:**
  http://cordis.europa.eu/fp7/ict/photonics/docs/meetings/smeworkshop20june2011-report_en.pdf

Photonics in ICT WP 2013
ICT Objective 3.2 c) ii)

Coordination & Support Actions

- **c) ii) Actions fostering innovation in SSL**
  - Cooperation of actors along the value chain to promote *innovative design and new business models* through *open innovation*
  - Cooperation of lighting industry and end users
  - Analyse effects of SSL in applications where there are benefits for *people's health and well-being*
  - Address *scarcity of materials*, use of *hazardous materials* and *recyclability & disposability* of SSL products

SSL Green Paper COM(2011)889

Photonics in ICT WP 2013
ICT Objective 3.2: Some additional actions

- **c) iii) Other Coordination and Support Actions**
  - **Cooperation of photonic clusters and national technology platforms to stimulate the *innovation potential of SMEs***
    Based on business cases demonstrating a clear potential of sales and employment growth
  - **Raising the interest of European citizens, young people and entrepreneurs in photonics**

Coordination & Support Actions

Proposals should be driven by the relevant stakeholders

- **d) ERANET Plus**
  - **A joint call for proposals on a photonics topic of strategic interest, involving national and/or regional grant programmes**

4 M€

ERANET Plus Action

Proposals should be driven by regional and/or national research agencies

Photonics in ICT WP 2013
ICT Objective 3.2: Expected Impact

Expected Impact

- Secured European **industrial leadership** in photonic applications & technologies, and safeguarded European **capacity to manufacture** innovative products
- Broader and faster **take-up** of photonics in innovative products, in particular by SMEs
- Accelerated **innovation and deployment** of SSL
- Improved **innovation effectiveness** of photonics clusters in particular towards SMEs
- Increased **awareness & interest** in photonics for general public, young people and entrepreneurs
- Closer **cooperation & alignment** between participating regional, national & EU-wide research programmes via ERANET+ action

Contact persons and pre-proposal check procedures for ICT WP 2013

ICT Call 11: Opens 18 Sept 2012, **closes 16 Apr 2013**

Involved objective: 3.2

Contact Persons:

- All ICT Photonics Objectives (3.2 and 3.3 (a.II and III)):

Michael Hohenbichler

- Send your questions to: **cnect-photonics@ec.europa.eu**

Pre-proposal check procedure:

- You can send a standard form ('Annex 6 of the Guide for Applicants') to **cnect-photonics@ec.europa.eu**
- **Until three weeks before the closing of the call**
- The advice/feedback from the EC is informal and non-binding

CIP ICT PSP
Work Programme 2013

Objective 3.5: Biophotonics solutions for diagnosis, monitoring or treatment of disease

ICT-PSP WP 2013
Focus and outcomes

***Funding Instrument**: Pilot B – 3-4 actions for up to 10 M€ in total*

***Focus and outcomes**:*

- Demonstrate in real application settings innovative biophotonics based solutions for the **diagnosis**, **monitoring** or **treatment** of disease.
- Further develop, improve and assess the solutions under a sufficient range of realistic conditions and disease profiles.
- Outcome: solutions which have been evaluated by professional end-users and which demonstrated **significant advantages** with respect to current approaches, with the ultimate goal being their introduction into the market place.

ICT-PSP WP 2013
Conditions and characteristics (1)

Conditions and characteristics:

- Examples of advantages with respect to currently approaches
  - **Earlier or faster diagnosis** of disease.
  - More sensitive **monitoring** of the progression of disease.
  - **Less invasive** or **more effective treatment** of a disease.

- The solutions involved should have proven their functionality.
- Evaluating and improving the performance of the solutions.
- Evaluation must be carried out in real-life conditions and should fit as far as possible in the clinical workflow, protocols and procedures.
- Clinical trials are **not** covered.

ICT-PSP WP 2013
Conditions and characteristics (2)

Conditions and characteristics:

- Close involvement of **professional end-users** (for example doctors or clinicians) and **medical equipment manufacturers** throughout the duration of the projects with the aim of ensuring acceptance and uptake.

- Dissemination and communication targeting the professional end-user community as well as the appropriate public authorities and other relevant stakeholders who could play a role in the further **acceptance and wide deployment** of targeted solutions.

ICT-PSP WP 2013
Impact

Impact:

- **Accelerated acceptance and wider deployment** of innovative biophotonics based solutions, leading to more effective health care
- **Increased competitiveness** of the European medical equipment industry
- **Improved health** of citizens.
- **Greater awareness** of the potential of biophotonics based solutions in the health care sector

Contact persons and pre-proposal check procedures for ICT-PSP 2013

CIP-ICT PSP Call 7: Closes 14 May 2013

Theme 3 - "ICT for Health, ageing well and inclusion", objective: *3.5 Biophotonics*

CIP-ICT PSP call information:

http://cordis.europa.eu/fp7/ict/photonics/calls-cip3-5_en.html

Contact Persons: *Eddy.Corthals@ec.europa.eu*

Send your questions/pre-proposal check form to:

cnect-A1@ec.europa.eu

For further information:

http://cordis.europa.eu/fp7/ict/photonics/