ICT WP 2013
Objective 3.2
NCP meeting, 5 September 2012, Brussels

Bart Van Caenegem

Project Officer, CONNECT-A1 Photonics

European Commission

Bart.van-caenegem@ec.europa.eu

EU 2020 Strategy & Photonics

Policy actions

Key Enabling Technologies

Digital Agenda
10011001010111011100001002010-2020
for Europe

Green Paper on SSL

Connecting Europe Facility

Research & Innovation actions

SEVENTH FRAMEWORK PROGRAMME

cip competitiveness and innovation framework programme 2007–2013

SSL Pilot Actions

Photonics in Horizon 2020

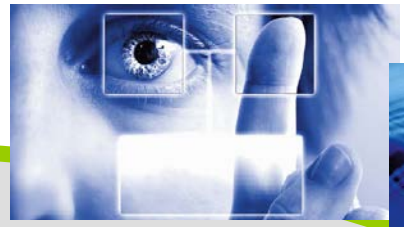
EU Photonics

PHOTONICS21

INNOVATION UNION

Photonics in FP7 ICT Theme

http://cordis.europa.eu/fp7/ict/photonics/projects-fp7_en.html



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Communications

Safety & Security

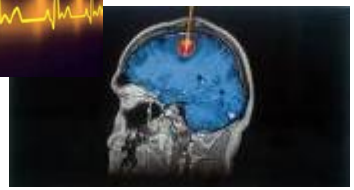
Lighting & Displays

~500 M€ of EU funding

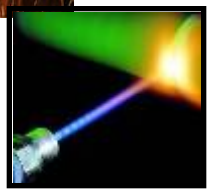
> 100 R&D Projects

Organic Photovoltaics

Biophotonics

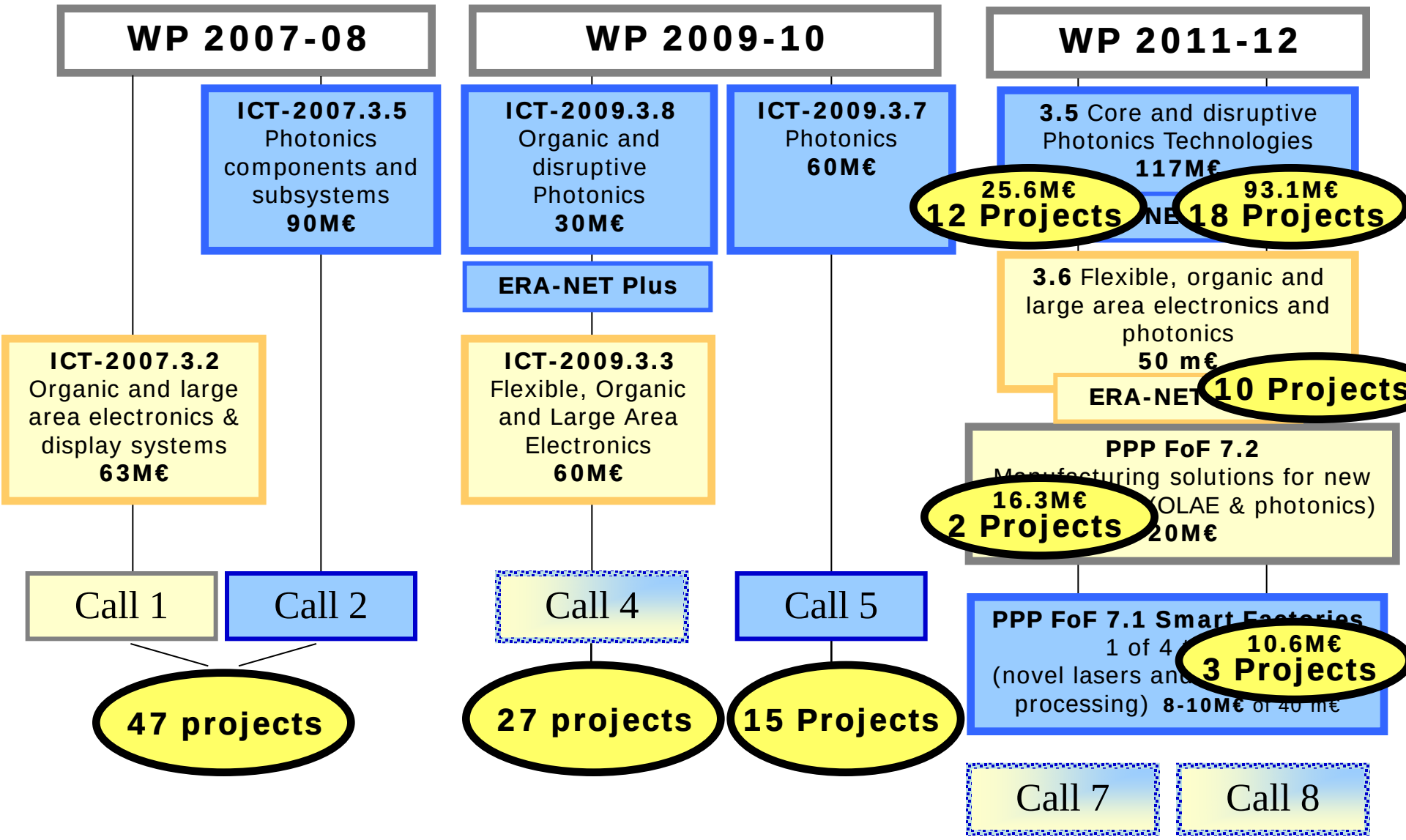


Manufacturing



FP7-ICT WP 2011-12

Photonics and Organic Electronics



Photonics in ICT WP 2013

Photonics in ICT 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 → IP 8 M€
    - ii. Coordination and support actions fostering innovation in SSL
    - iii. Other coordination and support actions
  - d) **ERANET-plus action** → EN+ 4 M€

STREP 42 M€

CSA 7 M€

Strong industrial participation along the value chain is expected!

Photonics in ICT WP 2013
Photonics beyond ICT obj. 3.2

- **ICT Objective 3.3 Heterogeneous Integration of Key Enabling Technologies** — 64 M€
  - a) Integrating heterogeneous technologies
    - ii. Hybrid integration of *organic electronics* and micro/nano-electronics — IP, STREP
    - iii. Further development and validation in real settings of micro-nano-bio and *bio-photonics* systems — IP, STREP
- **ICT Objective 3.4 Advanced Computing** — 72.5 M€
  - a) Next generation of energy- and cost efficient servers for data-centres
    …. Research challenges include: …. *optical interconnects* — (part of) IP
- **FoF PPP Objective 7.2 Equipment assessment for sensor and laser based applications** — 35 M€
  - a) ....
  - b) *Innovative laser applications in manufacturing* — IP
- **ICT Objective 10.1 EU-Japan R&D co-operation** — 9 M€
  - a) *Optical Communications* — *one* STREP

Photonics in ICT WP 2013
ICT Objective 3.2 - a)

3.2 – a) Application-specific photonic devices

i. Optical data communications

Photonic devices enabling future networks with increased flexibility, bandwidth, energy efficiency and cost effectiveness. In particular:

- Devices for fully converged networks;
- Devices for flexible, dynamic networks.

Device manufacturers; Equipment suppliers; Network operators

ii. Solid-state lighting

- Large area, large uniformity OLEDs for general lighting with increased lifetime and brightness
- High performance, reliable and low cost SSL lamps and modules with added intelligence

SSL manufacturers and/or suppliers

iii. Lasers for industrial processing

Short / ultra-short pulsed laser sources with high average output power for high speed surface processing and cutting at micro/nanometre precision.

- May include the optical elements for beam manipulation

Laser device & equipment manufacturers; End users

Consortia should involve:

Photonics in ICT WP 2013
ICT Objective 3.2 - b)

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

Focus: Technologies for automated, low-cost volume manufacturing of highly integrated, complex photonic devices

Consortia should involve:

i. Integration technologies for PICs

Aims at enhanced capabilities (e.g. integration density, functionality, performance) through the use of

- Innovative materials;
- Nanophotonics or other new functional structures

Photonic device manufacturers

ii. Cost effective assembly and packaging technology

- Assembly technology may include in particular hybrid optical integration
- Should address also the related thermal, electrical and mechanical challenges and the related fabrication technology

Photonic device manufacturers; Fabrication tool suppliers

Photonics in ICT WP 2013
ICT Objective 3.2 & Photonics Access Services (1)

c) Technology take-up and Innovation Support

IP **Up to 8 M€**

- **c) i) Access services for the wider adoption and deployment of photonic technologies in innovative products**

WHAT?

- **Driven by concrete business needs**
- **Services are in particular aimed for SMEs. Be efficient and fast for the SME**
- **Services best span the full innovation cycle and eco-system needed for the wider adoption and deployment of photonics technologies**
- **A wide range of services could be included – some examples: training, feasibility studies, prototyping, design or engineering services, access to tools and equipment, etc.**

Photonics in ICT WP 2013
ICT Objective 3.2 & Photonics Access Services (2)

- **c) i) Access services for the wider adoption and deployment of photonic technologies in innovative products**

WHO?

IP

- **Providers of technology / services to cover the innovation cycle / supply chain**
- **Openness: Allow different technology / service providers**
- **Actors like innovation clusters, technology transfer centres are encouraged to participate because they can have key roles**

Better addressing the needs of SMEs, sharing best practices and experiences, brokering between users and suppliers

Photonics in ICT WP 2013
ICT Objective 3.2 & Photonics Access Services (3)

- **c) i) Access services for the wider adoption and deployment of photonic technologies in innovative products**

HOW?

- SMEs do not need to be beneficiaries of the grant agreement for receiving access services!
- One-stop shop approach providing European excellence
- Proposal can have competitive call(s) to add partners but must explain why the partnership need to enlarge

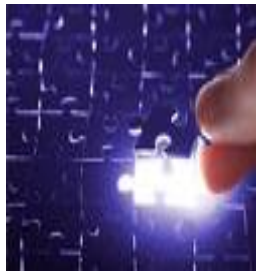
➔ **See also dedicated workshop of 20 June 2011**

- 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 and SSL

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

    Coordination & Support Actions
  - **Raising the interest of European citizens, young people and entrepreneurs in photonics**

  ➔ **Proposals should be driven by the relevant stakeholders**

- **d) ERANET Plus**

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

  ➔ **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