



OLAE in Horizon 2020

LEIT ICT WP 2014-15

DG CONNECT - European Commission

11 December 2013



Horizon 2020, Industrial Leadership (LEIT) Priority

An Overview of Calls related to OLAE



LEIT ICT 3

2014

**Advanced Thin, Organic
and Large Area
Electronics
Technologies**

38 M€

LEIT ICT 29

2014

**Joint call ICT/NMP on
Development of novel
materials and systems for
OLED lighting**

18 M€

LEIT ICT 28

2015

**Cross-cutting ICT KETs
Open Pilot line for
OLEDs on flexible
substrates**

14 M€

**Call Deadline
23 Apr 2014**

**Call Deadline
14 April 2015**

LEIT ICT Horizontal Action for 2014 – 15

LEIT ICT 37: Open Disruption Innovation Scheme (implemented through the SME instrument)

Action targeting Innovative SMEs, incl. photonics SMEs

No deadline – Always open calls



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LEIT ICT 3
2014
**Advanced Thin, Organic
and Large Area
Electronics
Technologies**
38 M€



**Call Deadline
23 Apr 2014**

ICT 3 – 2014: Advanced TOLAE technologies



38 M€

TOLAE: An emerging technology, the basis for advanced products in large area electronics that are *thin, light weight, flexible and/or stretchable*

➤ Suitable for large market sectors such as automotive, health, ...

The Specific Challenge

- Address the main technology barriers of TOLAE:
 - Lack of more efficient and stable materials
 - Lack of more complex TOLAE circuitry and functionalities
 - Increase the performance of components and the integration level
 - Improve route to manufacturability (reproducibility, yield)
- Further develop the TOLAE value chain – become *more application-driven*
- Pay attention to *recyclability* issues

**LEIT ICT Call
DDL: 23 APR 14**

An Overview of the Actions called: 38 M€

ICT3.a Research & Innovation Actions **17 M€**

→ *TOLAE technologies and manufacturing processes*

ICT3.b Innovation Actions **15.5 M€**

→ *Demonstrate innovative products enabled by TOLAE*

ICT3.c Technology Take-up and Innovation support Actions **3 M€**

→ *Competence centres providing EU-wide access services to industry*

ICT3.d Innovation support through pre-commercial public procurement (PCP) actions **2.5 M€**

→ *Target is public authorities (acting as first users)*

ICT 3.a Research & Innovation Actions

17 M€

TOLAE technologies and manufacturing processes

Focus is on:

- Conformable / flexible / stretchable substrates
- Advanced materials and technologies
- Scalable manufacturing processes

Small projects (2-4 M€)
100% funding

➤ *More functionalities with the device, better performance, longer lifetimes, higher mobility/conductivity, more uniformity, better encapsulation*

Additional Issues:

- ➔ *May include work on **design tool development, design rules and modelling***
- ➔ *May include **hybrid integration of nano-electronics, photonics and/or organic electronics** or specific needs for **fibre and textile electronics***
- ➔ *Projects must be **driven by user requirements with strong industrial and user commitment***
- ➔ *Include **standardisation, validation of results** for the target applications and address the **supply chain**, as appropriate*

ICT 3.b Innovation Actions

15.5 M€

Demonstrate innovative products enabled by TOLAE

- Prototype development and demonstration in smart packaging, advertisement or sensing
- Using **suitable manufacturing options** with the right balance between performance and volume

Aim is on building a dedicated innovation value chain

**Larger projects (5 - 8 M€)
70% funding**

Additional Issues:

- May include **small scale pilot manufacturing**
- Should be **driven by concrete business cases** and take into account **user needs**
- Target medium- to high-volume markets
- Include business plans for the targeted product and strong commitment to industrialise and manufacture in Europe
- Financial Engineering possibilities (e.g. with structural funds for the Regions)

ICT 3.c Technology Take-up and Innovation support Actions **3 M€**

Access services to industry → targeting first users and early adopters, in particular SMEs for the wider adoption and deployment of TOLAE technologies in innovative products

Access services include: Access to knowledge, prototyping, testing, manufacturing, design or engineering

Additional points:

1 project, 100% funding

→ Should be led by the TOLAE excellence centres and innovation clusters

→ May also include TOLAE skills improvement or large promotion to young people, general public, etc.

ICT 3.d Innovation support through PCP actions **2.5 M€** **PCP Cofund**

Enabling the take-up and deployment of **electronic and photonic textile technology developments** for health care applications

→ The action addresses public authorities acting as first users by procuring innovative technology development and its take-up

ICT 3.a Research & Innovation Actions

- Reinforced ***industrial leadership*** in TOLAE technologies and products addressing ***high-impact, high-volume applications***
- Demonstrable ***innovations in functionality or performance*** and/or in ***manufacturability*** with high reproducibility and yield
- Improved ***business opportunities and value creation*** in Europe by reinforced ***cooperation along the value chain***

ICT 3.b Innovation Actions

- Market introduction of **competitive TOLAE products targeting high impact markets/applications** in smart packaging, advertisement and sensing
- Overcoming the "valley of death" and **building manufacturing capabilities and first exploitation opportunities** in Europe

ICT 3.c Technology Take-up and Innovation support actions

- Reinforced **innovation effectiveness of TOLAE excellence centres and innovation clusters** in particular towards SMEs
- Take-up of TOLAE technologies in innovative products by at least 40 SMEs **substantially improving their innovation capacity and time-to-market and with demonstrable revenue growth**
- Increased awareness and education and training skills in TOLAE

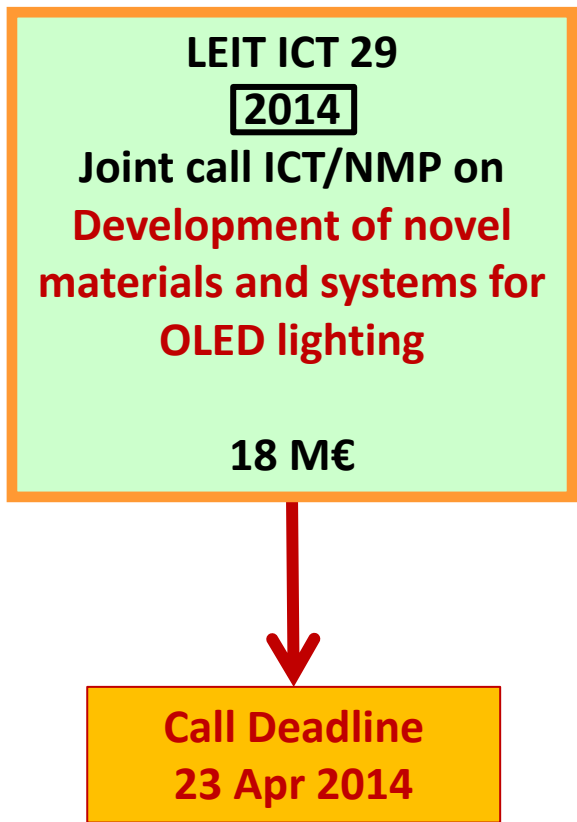
ICT 3.d Innovation support through PCP actions

- **Wide diffusion of innovative and cost-effective electronic and photonic textile technology developments** by PCP at the hospital or point-of-care, **enabling improvement of patient's care** while boosting productivity and employment



Horizon 2020, Industrial Leadership (LEIT) Priority

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A Joint Call between ICT and NMP on OLED materials and devices

The Specific Challenge

OLEDs: Major S&T and R&I investments are required for the realisation of flexible, high brightness light sources over large areas

- Give Europe a leading position on the world general lighting market and create new manufacturing jobs for novel consumer products
- Help in **reducing amount of electricity consumed by lighting** and in limiting carbon dioxide emissions

Small projects (2-4 M€), 100% funding

ICT 29: Research and Innovation Actions

18 M€

Focus is on: Materials, process & device technology for OLED lighting

Aims:

- On materials: allow for a competitive lifetime for all colours and white light (lifetime of several hundred hours at 97% of the original intensity)
- Realise OLED devices over larger surfaces, with higher brightness, larger uniformity and longer lifetimes
- **Specific target:** energy efficacy above 100 lm/W, with improved out-coupling efficiency

Additional Issues:

- A **demonstrator** at the end of every project
- **Who should be involved:** Material suppliers, OLED manufacturers or suppliers and OLED system integrators

ICT 29 – 2014: OLED lighting Expected Impact



ICT 29: Research and Innovation Actions

- Cost performance breakthroughs – lighting systems with production costs of 1€/100 lm
- Secured & reinforced industrial technology leadership and substantially increased market presence in lighting
- Improved business opportunities & value creation in Europe in lighting by reinforced cooperation along the value chain



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LEIT ICT 28
2015
Cross-cutting ICT KETs
Open Pilot line for
OLEDs on flexible
substrates
14 M€



Call Deadline
14 April 2015

An Overview of the Actions called: 56 M€

ICT28.a Innovation Actions

13 M€

■ ...

ICT28.b Pilot lines for advanced KET products

42 M€

■ Pilot line for OLEDs on flexible substrates

14 M€

■ Pilot line for analytical mid-infrared (MIR) micro-sensors

14 M€

■ Pilot line for PIC fabrication and/or dielectric based platforms

14 M€

ICT28.c Coordination and Support actions

1 M€

■ ...

ICT28.b *Pilot lines for advanced KET products*

Set-up and validate a pilot production for advanced KET products

Actions may include the development of fabrication processes;
Process qualification; and, further process engineering

TRL 5-7

1. OLEDs on flexible substrates

70% funding (up to 14 M€)

Focus: volume fabrication of reliable OLEDs (S2S, R2S and R2R) on flexible substrates with low material utilisation

→ *Actions may include: Upgrading of current pilot lines*

2. Analytical MIR micro-sensors

70% funding (up to 14 M€)

...

3. PIC fabrication on III-V and/or dielectric based platform

70% funding (up to 14 M€)

...

ICT 28.b Pilot lines for advanced KET products (cnt'd)

■ *All pilot lines should:*

TRL 5-7

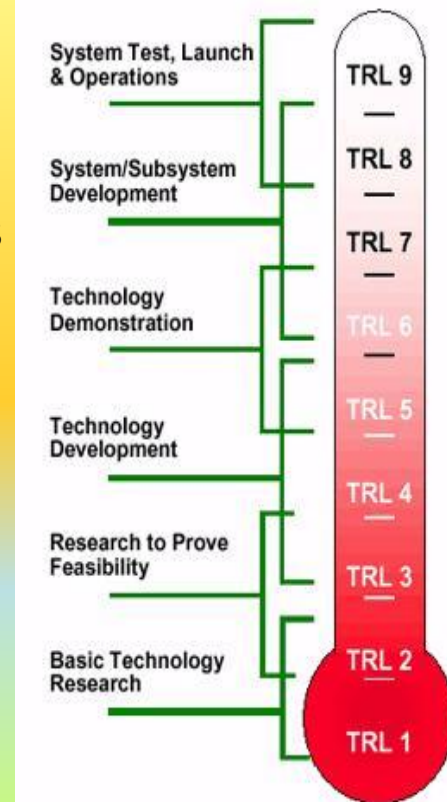
- Be open access
- Be driven by key stakeholders able to set-up and run such pilot lines
- Include **business plans for the further industrialisation and if applicable, for specific planned products**
- Include **strong commitment** to manufacturing in Europe

■ *Financial Engineering possibilities:*

Wherever appropriate, seek synergies and co-financing from elsewhere (e.g. structural funds); when combining funds, include a financial plan detailing the use of these funds for the different parts of activities proposed

■ *Dedicated evaluation criteria*

!



ICT28.b *Pilot lines for advanced KET products*

- **Cost-performance breakthrough:**
 - For **OLEDs**: making **OLEDs** competitive with **existing LED** solutions
- **Effective market introduction** of new and highly competitive **OLEDs** and **MIR** sensing products
- ...
- Improved **value creation** in **Europe** through stronger value and supply chains involving **relevant industrial stakeholders**



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LEIT ICT 37: Open Disruption Innovation Scheme (implemented through the SME instrument)

Action targeting Innovative SMEs, incl. photonics SMEs

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Financing innovative SMEs through the dedicated SME instrument

- For early stage, high-risk innovative SMEs
 - **Objective:** nurture promising innovative and disruptive ideas; support prototyping and demo in real world environments; help deployment
 - **Phase 1:** Concept and feasibility assessment
→ lump sum of 50 K€ per project for ~6 months project durations
 - **Phase 2:** R&D, demonstration, market replication (70% funding)
→ 0.5 to 2.5 M€ per project for 1 to 2 years; Must include a first commercialisation plan
 - **Phase 3:** via the Debt Facility (EIB/EIF)
- ***Apply for Phase 1 or directly for Phase 2***

Budget of the action: 90 M€ for 2014-15: (10% Phase 1, 88% Phase 2, 2% Phase 3)

- *Continuously Open Calls – Opens 1st March 2014*
- ***3 Cut-off dates in 2014:***
 - *For Phase 1: 18 June 2014, 24 Sep. 2014 and 17 Dec. 2014*
 - *For Phase 2: 09 Oct. 2014 and 17 Dec. 2014*
- ***Time to Grant: 3 months for Phase 1 and 6 months for Phase 2***

DG CNECT Contact Point: Unit F2
CNECT-F2@ec.europa.eu

For more information



Web sites:

<http://cordis.europa.eu/fp7/ict/photonics/> and <http://cordis.europa.eu/fp7/ict/components/>

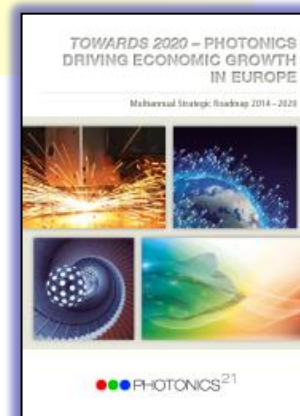
Contacts:

- For the Photonics Unit: [E-mail: CNECT-PHOTONICS@ec.europa.eu](mailto:CNECT-PHOTONICS@ec.europa.eu)
- For the Components Unit: [E-mail: CNECT-A4@ec.europa.eu](mailto:CNECT-A4@ec.europa.eu)

➤ Photonics21 and Photonics Public Private Partnership:



<http://www.photonics21.org>



Horizon 2020 and ICT WP 2014-15: To find out more:

- **Horizon 2020:** <http://ec.europa.eu/programmes/horizon2020/>
- **A guide to ICT-related activities in WP2014-15:**
http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?doc_id=3511
- **The ICT LEIT WP 2014-15 can be found at:**
http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/main/h2020-wp1415-leit-ict_en.pdf
- **The Participant Portal:** <https://ec.europa.eu/research/participants/portal>

