

Advanced Displays Research Integration Action



**Proposal for FP7 Research Topics  
ADRIA results**

2<sup>nd</sup> FP7 Consultation  
Workshop on  
Organic Electronics and  
Display Systems

Brussels  
May 15, 2006




ADRIA is funded as a  
Coordination Action under the  
IST priority within the 6<sup>th</sup>  
framework programme of the  
European Commission.




[www.adria-network.org](http://www.adria-network.org)

Advanced Displays Research Integration Action

**adria in a nutshell**



- **Project:** “Advanced Displays Research Integration Action”
- **Target:** **Federation platform serving as one-stop-shop for European expertise in displays & LAE**
- **Partners:**
  - VDMA German Flat Panel Display Forum (DFF)
  - SEMI
  - Scottish Optoelectronics Association (SOA)
  - Le Club VISU / SID
  - Swedish LCD Center
  - U Dundee
- **Status:** **Building up community services**
  - Competence mapping and roadmapping
  - Training seminars and university curriculum
  - Standards information
  - Common representation



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**In the drivers seat:  
Committed individuals**


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**Steering Committee**

- Hermann Schenk, Merck OLED Materials (chairman)
- Ian Underwood, MED
- Alain Doré, Club VISU / SID France
- Pierre Lucas, semi
- Bill Letcher, Swedish LCD Center
- David Rodley, U Dundee

**Advisory Board**

- Jyrki Kimmel, Nokia Research (chairman)
- Norman Bardsley
- Werner Becker, Merck KGaA
- Norbert Frühauf, U Stuttgart
- Paul-Henri Guering, Saint-Gobain Research
- Gunther Haas, Thomson
- Jonathan Halls, CDT
- Eliav Haskal, Philips Research
- Bruno Mourey, CEA-LETI
- Jean-Paul Parneix, U Bordeaux
- Peter Raynes, U Oxford
- Chris Williams, Flexynet / UKDN



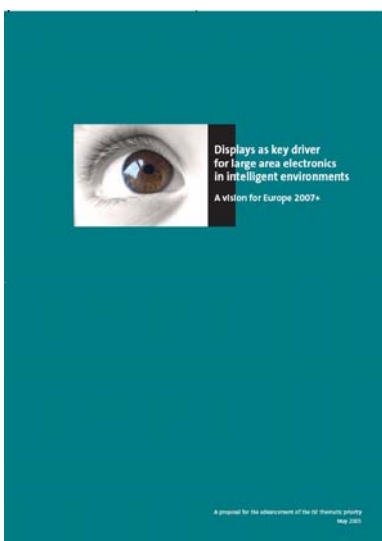
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**Initial action: Vision paper  
Consolidated community consultation**

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- **Vision paper**  
“Displays as key driver for large area electronics in intelligent environments”
- **Community recommendations for the 7<sup>th</sup> framework programme of the EC**
- **First draft submitted to the Commission on 23.12.2004, final version on 18.05.2005**
- **Proposal for RTD agenda**
  - 4 major categories
  - 9 topics for processes
  - 6 topics for materials
  - 12 topics for devices / design



Displays as key driver for large area electronics in intelligent environments  
A Vision for Europe 2007+  
A proposal for the achievement of the 6<sup>th</sup> framework priority  
May 2005

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**1st consultation meeting 10.06.2005**  
**Prioritisation of research topics**




- **32 attendees**
- **Presentations**
  - Research needs
  - Vision paper topics and adria roadmapping
  - EPIC OLED workshop
- **Discussion of research topics and strategic approach**
- **Discussion of ETP set-up**
  - Feed into Photonics
  - Separate follow-up in parallel
- **Prioritisation of research topics by Metaplan technique**




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**1st consultation meeting 10.06.2005**  
**Most wanted research topics (>5 votes)**



- **Categories**
- Displays with high optical performance, high resolution and low power consumption
- Organic ICs, RFID-tags
- Smart displays, integrating logic, sensors, display, antenna and power supply, organic, inorganic and hybrid
- **Devices / design**
- Ultra-low cost displays/indicators
- Flexible displays / indicators (LCD, OLED, electrophoretic, electrochrome,..)
- Small projection displays for portable devices
- Autostereoscopic and full 3-D displays




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## 1st consultation meeting 10.06.2005

### Most wanted research topics (>5 votes)




- **Processes** ■
  - process technology for high resolution displays (up to 300ppi)
  - flexible production techniques for rapid prototyping and customer specific products
  - large area, high resolution patterning equipment and processes
- **Materials** ■
  - All votes < 5



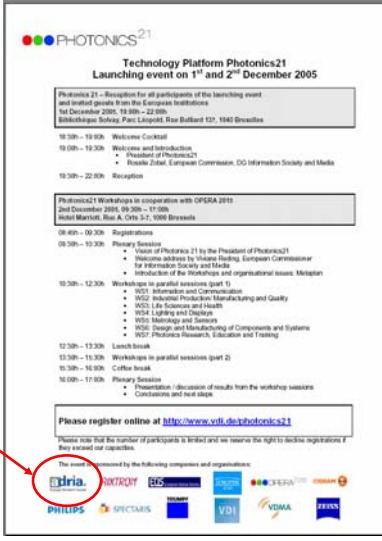
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## Feeding vision paper into EU Technology Platform “Photonics21”



- Following *one path* of the 10.06.05 consultation
- To integrate adria vision paper into existing ETP
- Presence at launching event 02.12.2005
- adria was sponsor
- Follow-up on the making of the Photonics21 SRA WG4 “Lighting and Displays”
- All-embracing?




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**Additional activity**  
**Goal of today**

- Following the *second path* of the 10.06.05 consultation
- To use adria vision paper large area and organic electronics background
- Preparation on adria Advisory Board meeting 21.02.2006 in Munich
- Following the second path:
  - Topics missing in Photonics SRA and research topics proposal
  - Topics that would benefit from a different context

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 EUROPEAN COMMISSION  
Directorate-General Information Society & Media  
Components and Systems  
Micro & Nano Systems

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*FP7 Consultation Workshop on  
Organic Electronics & Display Systems: Future R&D and*

**15 May 2006, Brussels**  
**9:00-17:30**  
**Room 2C**  
**Albert Borschette Building,**  
Rue Froissart 36, 1040 Brussels

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This WS is a follow-up of the SRA (Strategic Research Agenda) Technology Platform, Brussels 22 February 2006 and the 1<sup>st</sup> Consultation WS, Brussels 10 June, 2005

Main Objectives

- gather and analyse R&D and market information for active electronics and advanced displays
- brainstorm on the major R&D opportunities, challenges & breakthroughs
- identify emerging applications that would drive such into
- discuss the likely impact on the economy and society and

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**Proposal for FP7 research topics**  
**Headlines and focus areas I.**

- **Large Area Electronics**
  - Backplanes
  - Organic Electronics
  - Sensor arrays
  - Photovoltaics
- **3D**
  - Holographic
  - autostereoscopic
  - 3D broadcasting
  - European Standards initiative
- **Human Factors**
  - Perception research
  - Individual adaption
  - Ageing society

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**Proposal for FP7 research topics  
Headlines and focus areas II.**




- **Hyper-realistic display systems**
  - Super high colour fidelity
  - HIC
  - Dynamic range
  - Reliable control of luminance
  - High bandwidth communication
  - Standards
  - Match imaging system performance to display performance
- **Ultra-low cost ubiquitous displays**
  - Display effects
  - System integration (Display, driver...)
  - Large area, low cost manufacturing

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**Proposal for FP7 research topics  
Headlines and focus areas III.**



- **Manufacturing**
  - Equipment
  - Materials
  - Turnkey / small footprint manufacturing systems
  - Quality control for large volume low cost electronic manufacturing
  - Cost-effective custom manufacturing systems
  - Roll-to-roll processing
- **Virtual-reality display**
  - Display device
  - Optics
  - Design
  - Integration
  - Data delivery (wireless)
- **Zero-power displays**

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**Continuous update of research needs:  
adria Roadmapping**

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- adria roadmapping in 5 application areas
- Will result in 5 technology roadmaps
- Identification of technology gaps (“red brick walls”)
- Will be fed into FP7
- Final draft ready by September 2006
- Will be validated on 14.09.2006
- Ask us for details



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**Contact**

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