

Advanced Displays Research Integration Action

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The adria web-based roadmapping application

4th roadmapping workshop
Munich, February 22, 2006
Eric Maiser, VDMA-DFD



adria is funded as a Coordination Action under the IST priority within the 6th framework programme of the European Commission.

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Your premiere industry source
The adria website

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www.adria-network.org

- European Atlas of Competence
- Roadmapping
- Education & Training
- Standardisation awareness
- Calendar of Events (EU projects and beyond)
- Newsletter + Newsbits
- Reports



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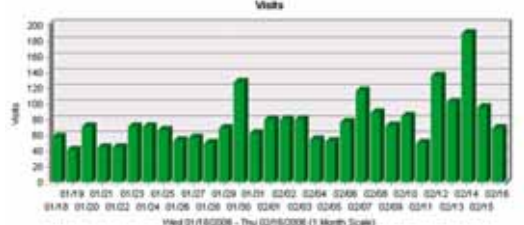
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adria as unique information source: The mapping modules

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- Website has grown...
- ...and is recognised
- Traffic high!
Avr. 77 visits per day

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Competence Mapping The incentives

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- The establishment of a one-stop-shop for comprehensive, up-to-date, structured, reviewed information about displays competence in Europe means you can
- find research activities
- find project partners
- find products and services
- increase your visibility
- increase networking possibilities

 **contribute and benefit!**




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Competence Mapping: Be part of the club!



- **Two areas:**
 - Products & Services
 - Research
- **Competence Mapping enhances credibility of community!**
- **Clear Benefits**

Display technology basis

1. LCD
 - 1.1. Nematic
 - 1.1.1. (Super) Twisted Nematic (S-TN)
 - 1.1.2. In-Plane Switching (IPS)
 - 1.1.3. Vertical Alignment (VA)
 - 1.1.4. Bistable Nematic
 - 1.1.5. Electrically Controlled Birefringence (ECB)
 - 1.1.6. Hybrid Aligned Nematic (HAN)
 - 1.1.7. LCOS (liquid crystal on silicon)
 - 1.2. Smectic
 - 1.3. POLC
 - 1.4. Cholesteric
2. LEO (organic LED)
3. OLED (organic LED)
 - 3.1. Small molecule
 - 3.2. Polymeric
 - 3.3. QLED on silicon
4. EL = inorganic electroluminescence
5. CRT = cathode ray tube
6. Field emission
7. FPD = plasma display panel
8. Electronic paper
 - 8.1. Electrophoretic
 - 8.2. Electrophoretic
 - 8.3. Electrochromic
 - 8.4. Interferometric
 - 8.5. other
9. Vacuum fluorescence
10. Addressing mode
 - 10.1. Passive matrix
 - 10.2. Active matrix
 - 10.2.1. Amorphous silicon
 - 10.2.2. Polycrystalline silicon
 - 10.2.3. Monocrystalline silicon (e.g. C-MOS)
11. MEMS (micro electro-mechanical system)
 - 11.1. DMD (digital micromirror device)
 - 11.2. interferometric
 - 11.3. other

Manufacturing aspects

1. Materials, components and processes
2. Manufacturing equipment and facilities
3. Quality and process control, test and measure
4. Other


Display features

1. Flexible, bendable, rollable display
2. Thin lightweight display
3. Large-area display
4. Microdisplay
5. High-resolution display
6. High brightness display
7. Sunlight readable display
8. Full color display
9. Fast response display
10. Bistable display
11. 3D display
 - 11.1. Auto-stereoscopic
 - 11.2. Holographic
 - 11.3. Volumetric
12. Viewing mode
 - 12.1. Direct view
 - 12.2. Projection
 - 12.2.1. Front projection
 - 12.2.2. Rear projection
 - 12.2.3. Eye projection
 - 12.2.4. Laser projection display
13. Optical mode of operation
 - 13.1. Emisive
 - 13.2. Transmissive
 - 13.3. Reflective
 - 13.4. Transflective

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Competence Mapping: An example



Research Activity - Example

AMOLED P&M Program

carried out by **Bohler, Thomas, Brack, Jochen, Gump, Michael**

Important milestones date: (Not specified)

Abstract: Research and development of high efficient and high quality full-color active matrix OLED (AMOLED) for small and medium applications to large size TFT-LCDs.

Since the development of the technology itself does in cooperation with the European FP6 center based in France, France, we are developing various full-color active matrices. This includes:

- Research and development of advanced active matrix technology with specific pixel layout. This includes the use of silicon substrates for good compatibility towards display improvement, burn-in reduction, luminance improvement and manufacturing related process reduction.
- Research and development of novel device for AMOLED emitting low-features for enhanced driving and good compensation solutions.
- Research and development of new generations of signal and color processing specific solutions for OLED pixel quality improvement. This enables a reduction of color and color uniformity related drawbacks, compatibility with an important color and color management. Research, has driving solutions for next generation color and color development.

Keywords / specific keywords:

Display technology basis:

- OLED (organic LED)
- OLED (organic LED) - Small molecule High efficiency in low voltage technology, low process cost
- OLED (organic LED) - Polymeric

Addressing mode: Active matrix

Addressing mode: Active matrix - Inorganic silicon Small pixel device for AMOLED color quality improvement. Development of new group technologies for color and color management.

Addressing mode: Active matrix - Inorganic silicon



Display features:

- High-resolution display
- High brightness display
- Full color display
- Fast response display

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adria as unique information source: Roadmapping






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Roadmapping “Intelligent Environments”


Scenes from “Minority Report”
20th Century Fox, 2002

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adria Roadmapping



adria practices a *hybrid roadmapping approach* i.e. meetings plus interactive web-application

- **Six roadmapping workshops for five display applications fields**
 - using the knowledge & expertise of the participants
 - to identify and specify the needs and
 - to identify, select, & develop technology alternatives
 - to satisfy the needs.
- **Web-based roadmapping tool for**
 - management of documents (e.g. meeting minutes),
 - inclusion of knowledge & experience otherwise missed,
 - assurance of continuity of roadmapping process.




 **contribute and benefit!**


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Roadmapping Module



- **Register**
- **Go to Roadmapping area**
- **Find**
 - Workshop minutes
 - Support documents (e.g. other roadmaps)
 - Discussion forum



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“Roadmapping targets” An example

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Product / Service Roadmap Target

Augmented Reality Display (for security relevant information) in vehicles

URL

Target date: 12/31/2010

Short description of Roadmap Target: Overview of stages of the existing reality combined with additional information, usually presented by an optical medium.

Keywords / comments

Display features

- Image resolution: digital
- Field-of-view: digital
- Viewing mode
- Viewing mode - Projection
- Projection: digital

Applied areas field

Automotive

Aviation

Medical: equipment and facilities

Medical: application and equipment

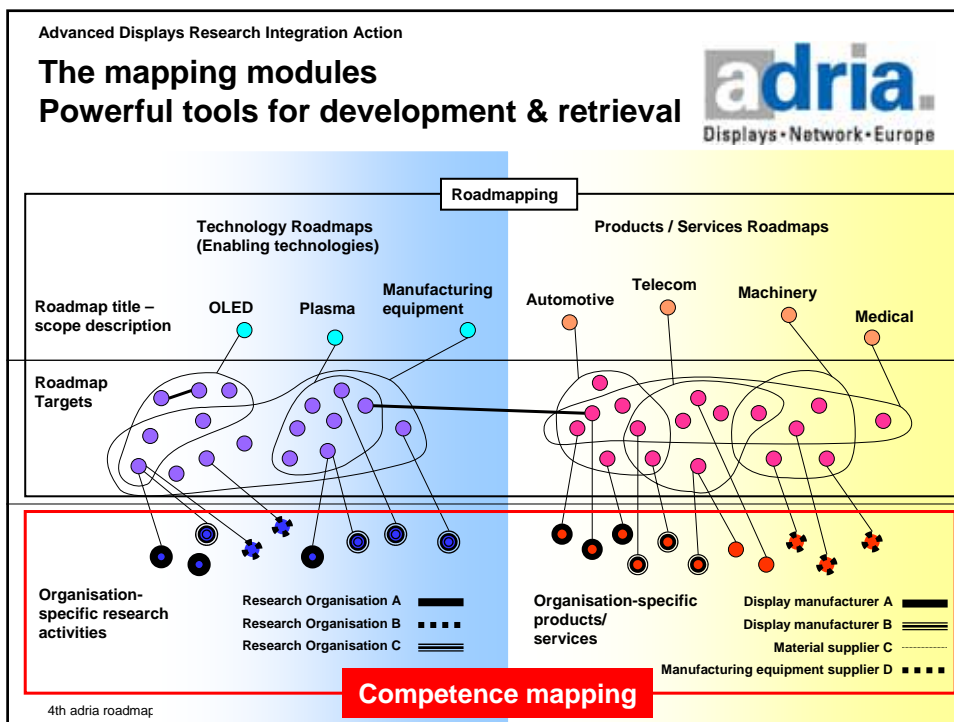
Related Products / Services

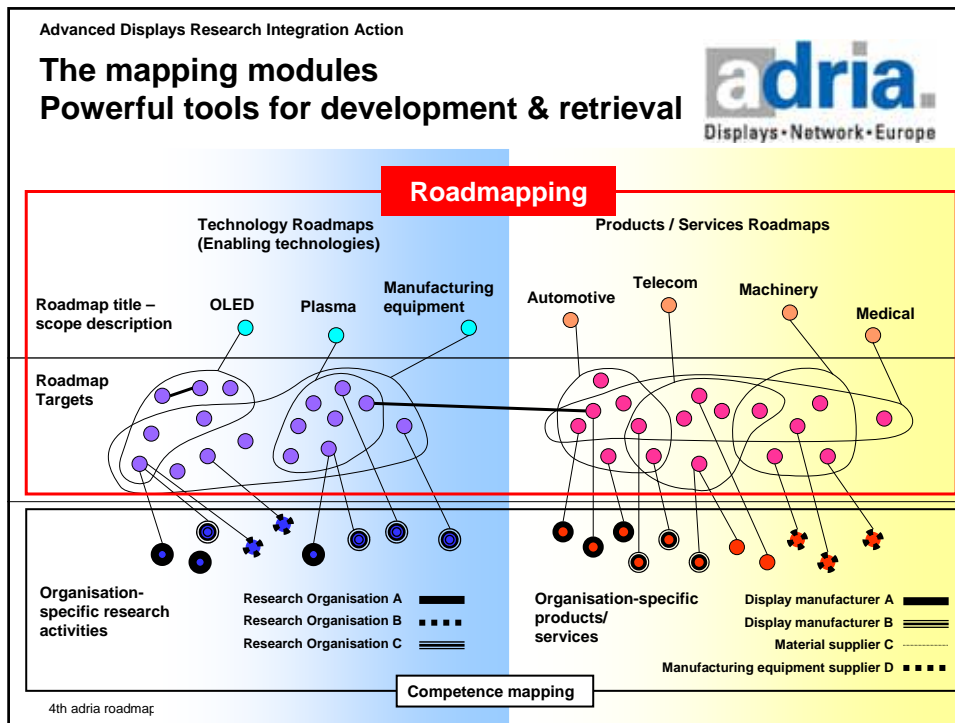
Automotive displays

Related Products / Services

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Contact

adria Secretariat

Dr. Eric Maiser
Stefanie Jost-Koestering
c/o VDMA –
The German Engineering Federation
Lyoner Str. 18
D – 60528 Frankfurt am Main
Germany

Tel.: +49 69 6603-1479
Fax: +49 69 6603-2479
eMail: secretariat@adria-network.org

www.adria-network.org

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