

# PHILIPS

Research for the  
Connected Consumer and beyond

**Rick Harwig**  
CEO

Philips Research  
Financial Analysts Day 2004

# Agenda

- Introduction to Philips Research
- Our contribution to the Connected Consumer
- Our work on 'beyond'
- Benefits to Semiconductors of easy access
- Conclusion

## Basic facts

- Active in research since 1914
- Laboratories in the Netherlands, UK, Belgium, Germany, USA, China, India
- Investment in Research:  
0.8% of sales
- Funded 2/3 by divisions,  
1/3 by Board of Management
- 2100 people, 1200 scientists
- Patent position: #1 China & Europe,  
#8 USA
- 1.5 patents filed per scientist/year



## A broad scope

Healthcare Systems



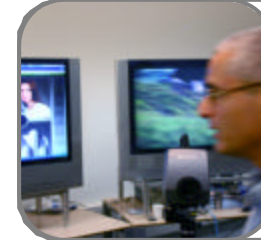
Lighting, Devices  
and MicroSystems



Systems and Software



Imaging Technologies



Integrated Circuits



Connectivity Solutions



Storage



Research Services



# A broad scope at work for Semiconductors

Healthcare Systems



Lighting, Devices  
and **MicroSystems**



Systems and Software



Imaging Technologies



Integrated Circuits



Connectivity Solutions



Storage



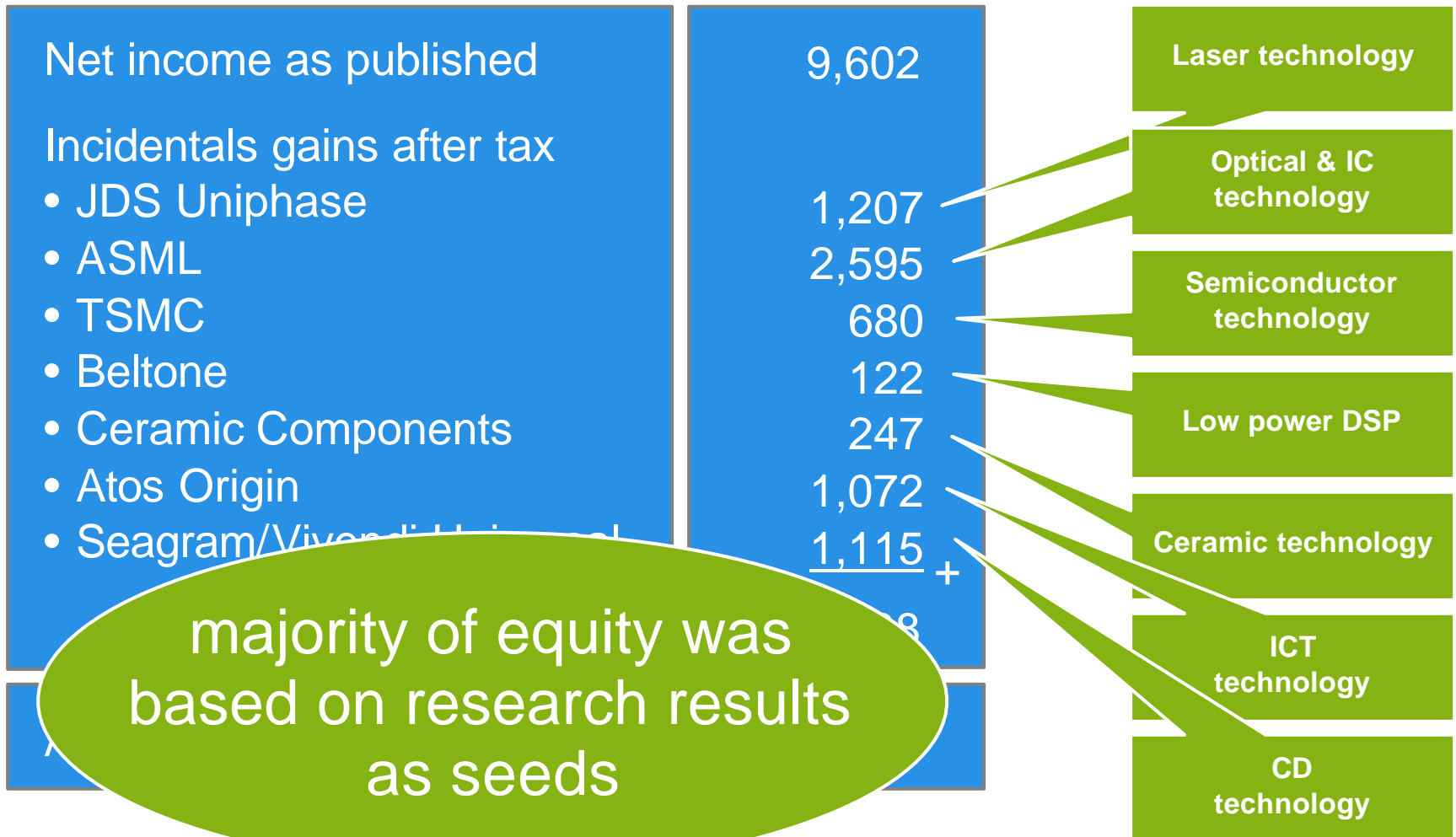
Research Services



# Scientific publication impact: 4<sup>th</sup> amongst over 200 European Institutes

1.	Research Centre for Energy and Environmental Technology (E)	1.99
2.	Glaxo Wellcome Smithkline Beecham Research (UK)	1.93
3.	Nat. Inst. for Nuclear Physics & High Energy Physics (NL - Amsterdam)	1.87
4.	<b>Philips Research (NL - Eindhoven)</b>	<b>1.84</b>
5.	France Telecom (F)	1.56
6.	University of Cambridge (UK)	1.55
7.	Risø National Laboratory (D)	1.53
8.	University Of Oxford (UK)	1.48
9.	British Telecom (UK)	1.46
10.	Rutherford Appleton Laboratory (UK)	1.42
11.	Niels Bohr Institute (D)	1.42
12.	<b>Eindhoven University of Technology (NL)</b>	<b>1.40</b>
13.	Technical University of Munich (G)	1.40
14.	Observatory Astronomy Rome (I)	1.40
15.	Institute Pasteur (F)	1.39

# The year 2000 indicative of value of Research



# Our mission

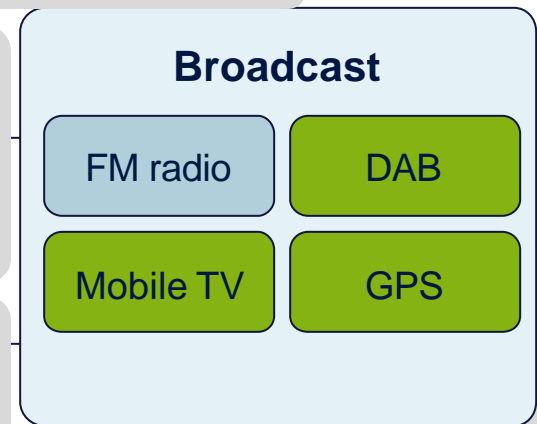
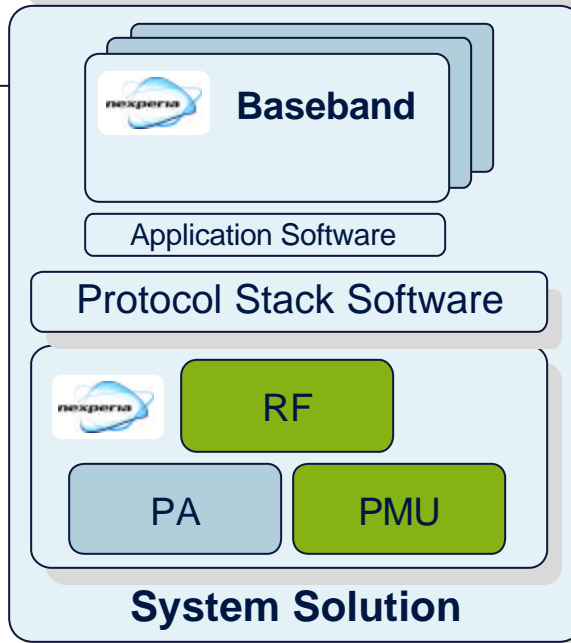
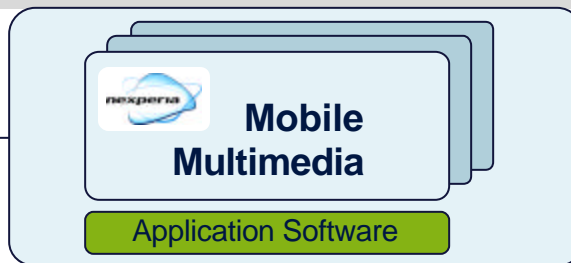
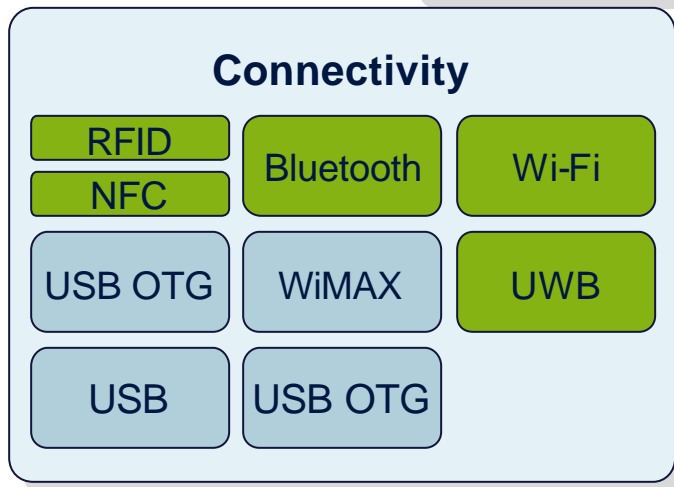
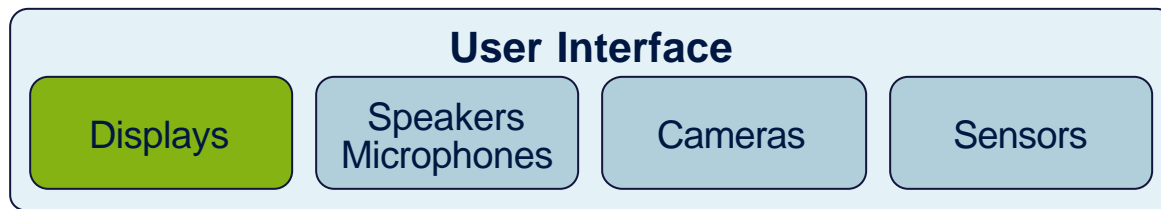
- Create value and growth for Royal Philips Electronics through technology-based innovations, improving its global competitive position in its current portfolio, and leading the company into developing new businesses
  - Short term
    - Leveraging academic resources of Europe, the USA and Asia
  - Mid-term
    - Philips participates in >200 standardization bodies
    - 1900 partnerships with 900 different partners via European projects
  - Longer term
    - Ambient Intelligence
    - Molecular imaging & diagnostics



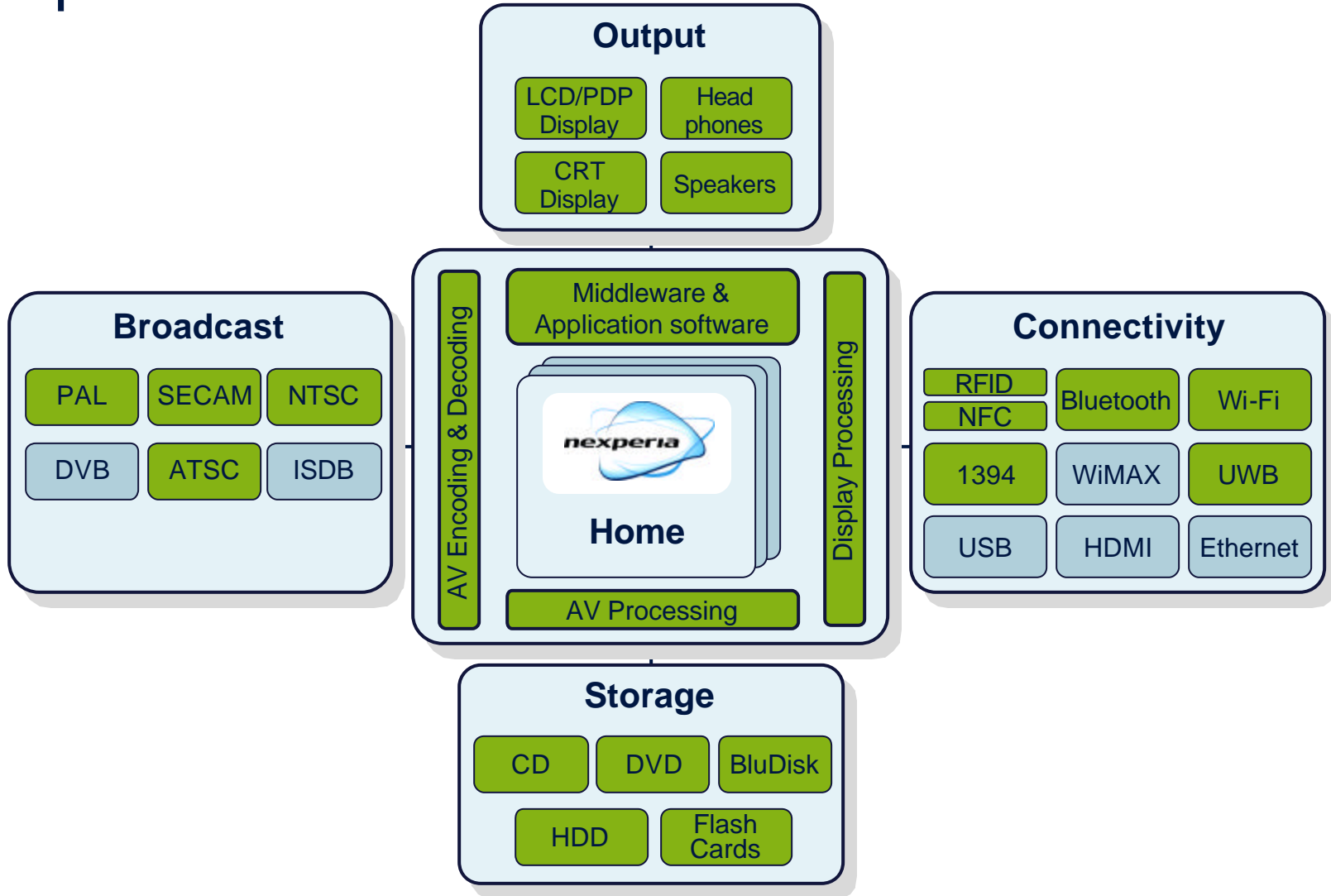
# Agenda

- Introduction to Philips Research
- Our contribution to the Connected Consumer
- Our work on 'beyond'
- Benefits to Semiconductors of easy access
- Conclusion

# Research contribution to Nexperia Mobile



# Nexperia Home



# Contributions across the entire system

- DSP in Nexperia Home and Mobile
  - TriMedia and REAL
- Picture improvement algorithms
  - Moving from TV to mobile (LifePix)
- Sound improvement algorithms for Mobile
- Technical approaches for embedded memory and for testing of complex digital ICs
- Innovations in process technology (@IMEC)
- And many more...



# Agenda

- Introduction to Philips Research
- Our contribution to the Connected Consumer
- Our work on 'beyond'
- Benefits to Semiconductors of easy access
- Conclusion

# What is Ambient Intelligence?

- Our vision of the evolution of electronics
  - In the future electronics will be embedded everywhere, giving people the experience of their environment responding to them intelligently
- The value is in the experience
- Our vision has been adopted by the EU, who are funding €3.7 billion between 2002-2006 in FW6





Vincent van Gogh, The Potato Eaters, 1885

# The timeline to Ambient Intelligence

- ‘The Dark Ages’: people were ‘slaves’ of the elements
- Broadcast era: access to the world via the radio and TV and distributed media
- Today: Consumer connects to whom or what when and where he or she wants to
- Tomorrow: people’s environments will fulfil their everyday wishes



PHILIPS





PHILIPS





PHILIPS





# Our work towards Ambient Intelligence

1/2

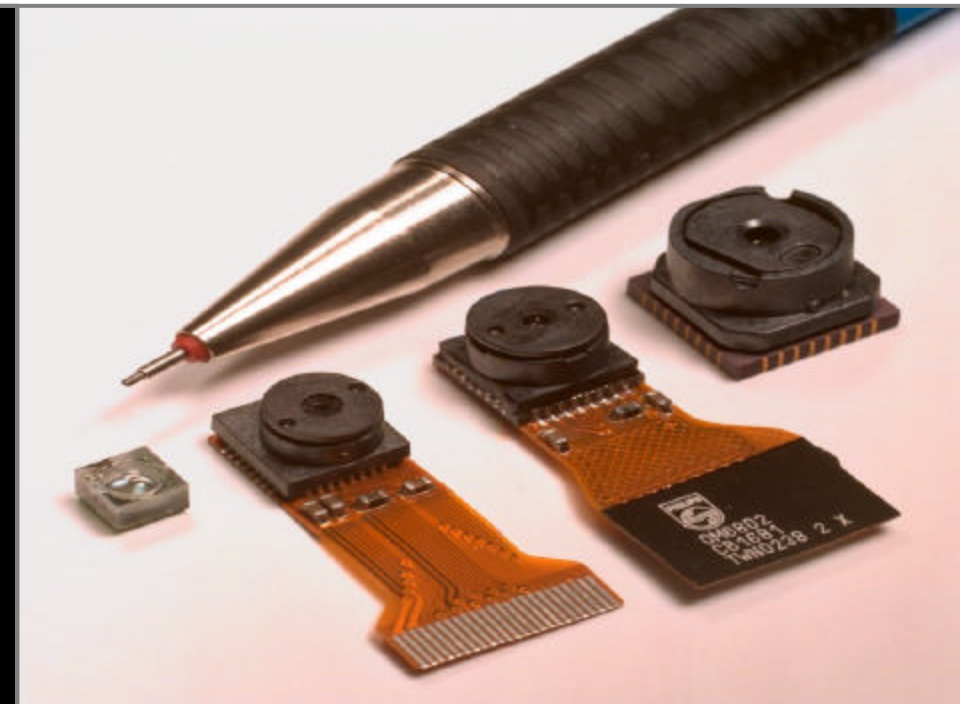
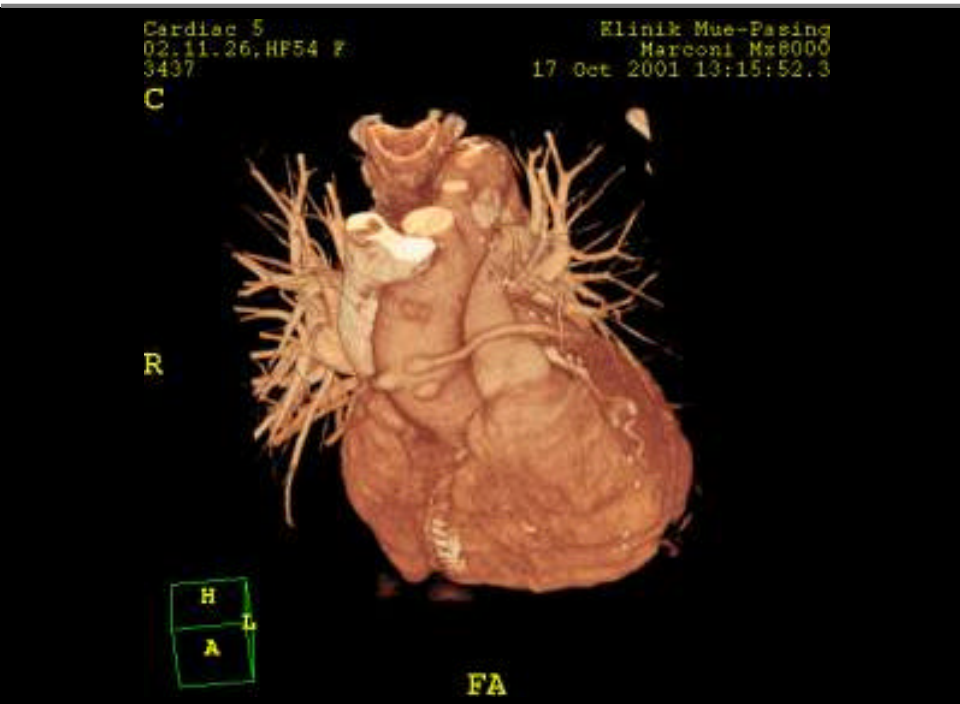


**Immersive experience**  
 by connecting enhanced TV  
 (AmbiLight) to all rendering  
 devices

**Visible everywhere**  
 Polymers for thin, form-free  
 displays and signage

# Our work towards Ambient Intelligence

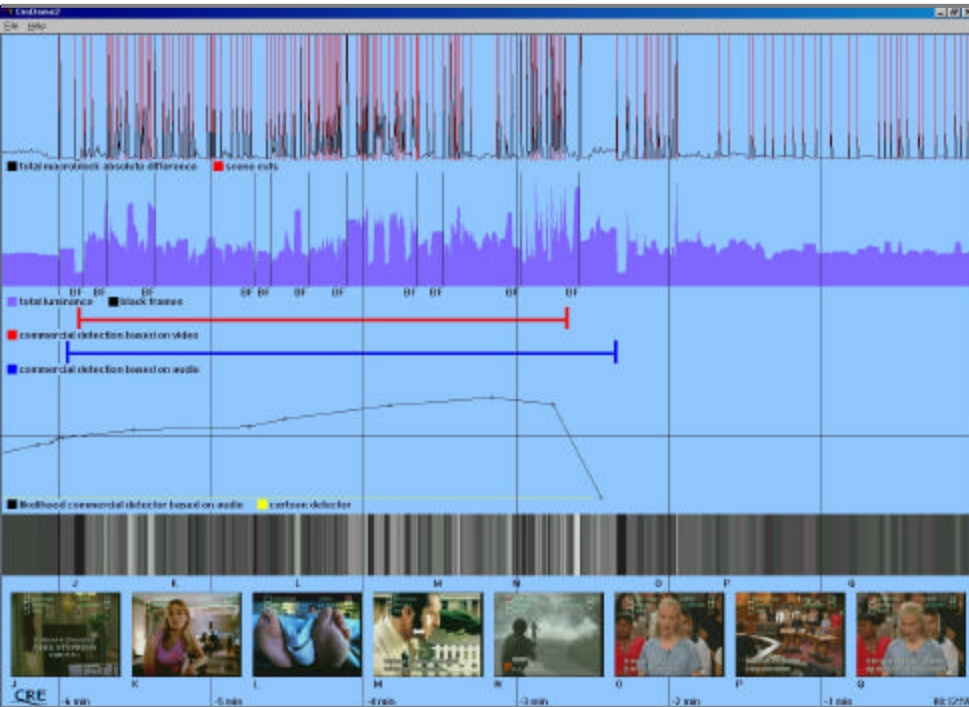
2/2



3D solutions  
 for consumer and professional  
 applications

System-in-Package  
 Integration of chips with another  
 component to create a multi-  
 functional module

# Efforts also for shorter term business



Smart Content Management  
for next generation recorder

Digitising paper  
the last analogue content domain

# Agenda

- Introduction to Philips Research
- Our contribution to the Connected Consumer
- Our work on 'beyond'
- Benefits to Semiconductors of easy access
- Conclusion



## Developing the open High Tech Campus Eindhoven

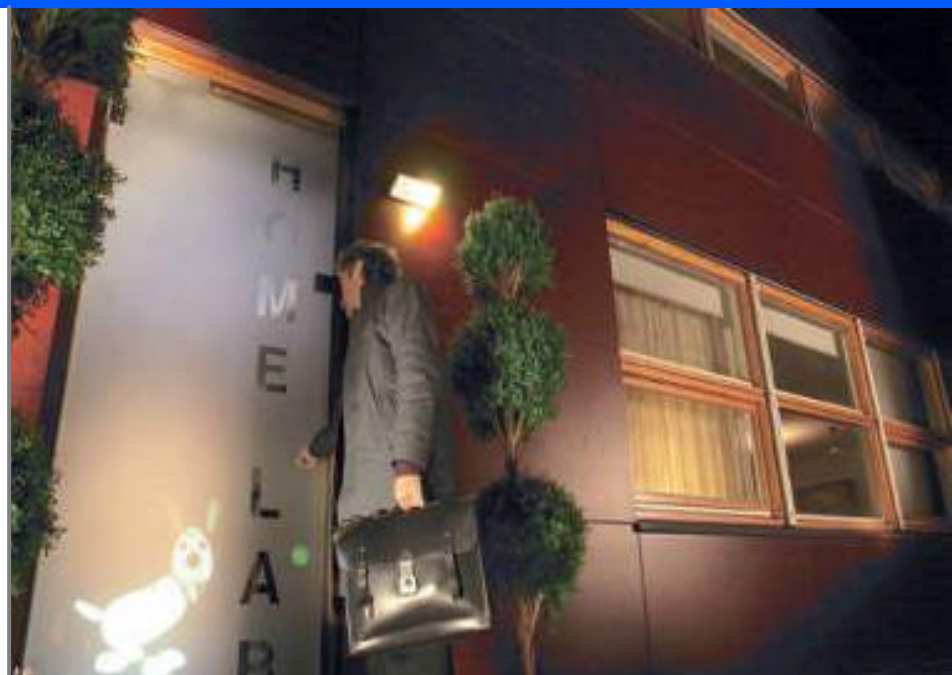
- Research maintains world-class resources by also working for others
  - MiPlaza cleanroom, HD Studio, EMC<sup>3</sup>, etc.
- Research labs and Semiconductors lab are co-located
  - Systems & Solutions
  - Developed software rapidly implemented





## Research driven by customers and consumers

- HomeLab was built specifically for direct consumer tests
- Close to 100 guests from strategic customers annually attend our Corporate Research Exhibition



# Conclusions

- Unique research organization
  - Broad scope
  - Highly productive
  - Valuable
  - Influential
- We have enabled Connected Consumer growth
- We are a key technology resource for realizing Nexperia solutions
- With Ambient Intelligence we create new opportunities
- Easy access to Research provides:
  - More focus on customer and consumer needs
  - Cost-efficient maintenance of world-class competencies
  - Speed in realizing Nexperia features



