European Technology Platform

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Elements of Presentation

What are Technology Platforms?

European Commission Involvement

Examples of Experience to Date

Next Steps

Technology Platforms: Concept

Stakeholders getting together to define a Strategic Research Agenda on a number of strategically important issues with high societal relevance where achieving Europe's future growth, competitiveness and sustainable objectives is dependent upon major research and technological advances in the medium to long term.

Technology Platforms: Three Stages

Stage 1:	**Stakeholders get together**
Stage 2:	**Stakeholders define the strategic research agenda**
Stage 3:	**Stakeholders implement the strategic research agenda**

Technology Platforms: Factors for Success

Flexibility: No "One Size Fits All"

Transparency: Clear Rules of Participation

Openness to Wide Stakeholder Involvement

Operational Focus from Early Stage

Committed Involvement of National Authorities

Consider Financial Aspects at Outset

Technology Platforms: European Commission Involvement

NOT:

- ❑ Steering / Directing
- ❑ Formally Labelling
- ❑ "Institutionalising"
- ❑ Bound by Views of Platforms

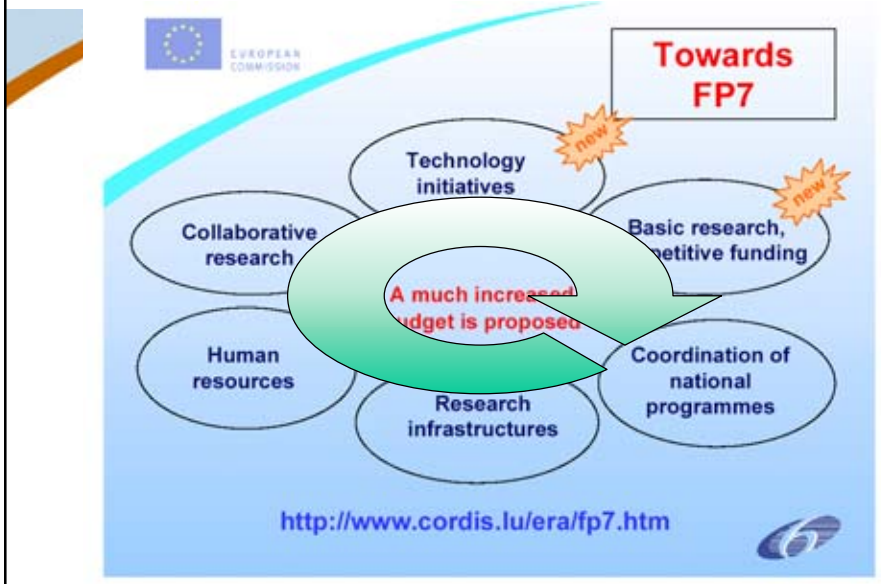
BUT:

- ✓ Fostering a "bottom-up" approach
- ✓ Facilitating
- ✓ Guiding where necessary

Emerging Topics for Platforms

- **Radical Change in a Sector**
  Examples: Hydrogen/Fuel Cells, Nanotechnologies
- **Sustainable Development**
  Example: Plant Genomics and Biotechnology
- **Public Goods and Services**
  Example: Innovative Medicines for Europe
- **Strategic, High-Technology**
  Examples: Aeronautics,
  Embedded Systems, Nanoelektronik

European Technology Platforms

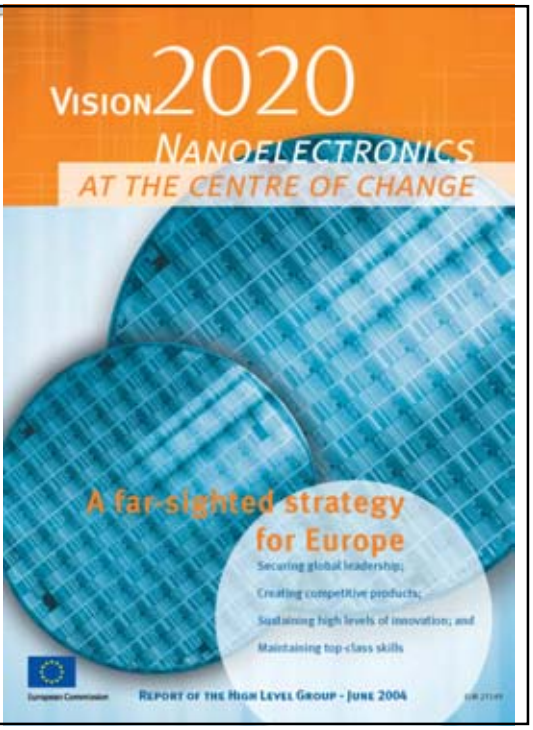


Existing European Technology Platform Initiatives in the field of Electronics

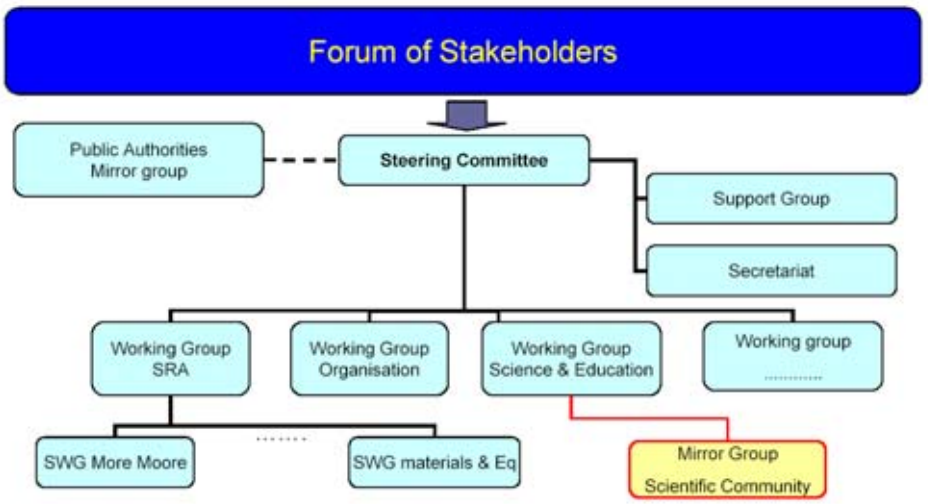
- ENIAC - Nano Electronic Platform Initiative
- ARTEMIS – Embedded System Platform
- Mobile Communication Technology Platform

- Smart System Integration Technology Platform
- Photonic Technology Platform

European Technology Platform Nanoelectronics



ENIAC Structure



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European Technology Platform "Nanoelectronics" High Level Group

Eniac Application domains at 2020 horizon

Society needs

Safety and Security	Education & Entertainment	Communications	Health	Mobility
Personal Emergency Systems	Content with best Quality (e.g. HDTV)	Seamless wired and wireless access	The Doctor in your Pocket	100% Safety on the Road
Protection against Crime and Terrorism .	Learning anywhere, anytime	Mobile Services without compromise	Real-Time Diagnostics	Integrated Transport Systems
Secure Home Environment	Content Protection	Protection of privacy and content	Bio-chips, Body-Sensors	Prevention of pollution

ENIAC strategy: a top-down approach

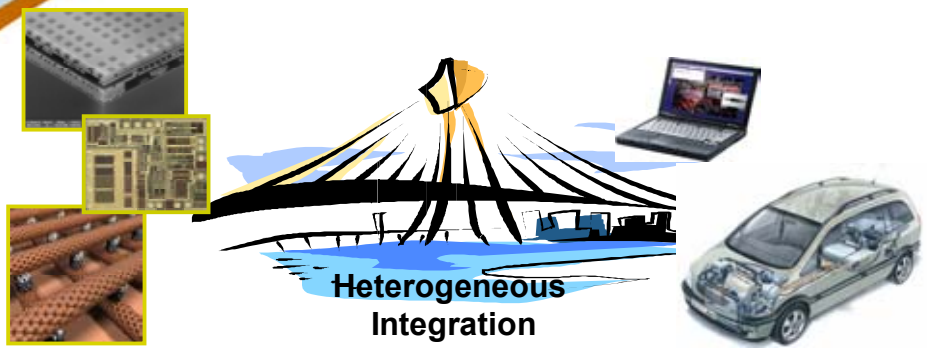
Society needs

Application domains at 2020 horizon

SRA domains

- Design Automation
- Heterogeneous Integration
- Beyond CMOS
- ***'More Moore'*** | ***'More than Moore'***
- Materials and Equipment

Heterogeneous Integration
Bridging the Gap between Chip and Application



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Nanostructures to **Application**

Heterogeneous Integration is the key for innovations in Europe

European Technology Platform on Smart System Integration

Property: Smart

- Miniaturised
- Able to communicate
- Networked
- Intelligent Data management
- Self testability
- Fault-tolerant
- Error correcting
- Intelligent E-Management
- Cognitive

Structure: System

- Complexity
- Fusion
- Flexibility
- Functionality
- Reliability
- Functional Autonomy
- Decentralisation
- Modularity

Process: Integration

- Monolithical Integration
- Packaging
- Hybrid Integration
- Human-Machine-Interface
- Standardisation
- Design for Reliability
- Design for Testing
- Protocols
- Assembly

Technology Aspects

- Combining of optics, mechanics, electronics, fluidics, thermo-dynamics, chemistry, biology
- Converging technologies: Micro, Nano, Bio, Info, Cogno
- Materials: silicon and non silicon, SiC, alternatives (e.g. polymeres, ceramics, etc.)
- Monolithic, hybrid, multi-chip, WL and other techniques
- Modularisation, characterisation and designability

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Thank you