

ENIAC Forum

Budapest, 28 November 2007

Implementing (part of) the SRA on nano-electronics for Europe

The ENIAC Joint Undertaking

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What is in a name?

ENIAC: The name of the first computer

ENIAC (European Technology Platform)

- Set of wise (wo)men: Vision 2020
- group of key actors defining a Strategic Research Agenda (SRA) , roadmap and boundary conditions for success
- on a voluntary basis

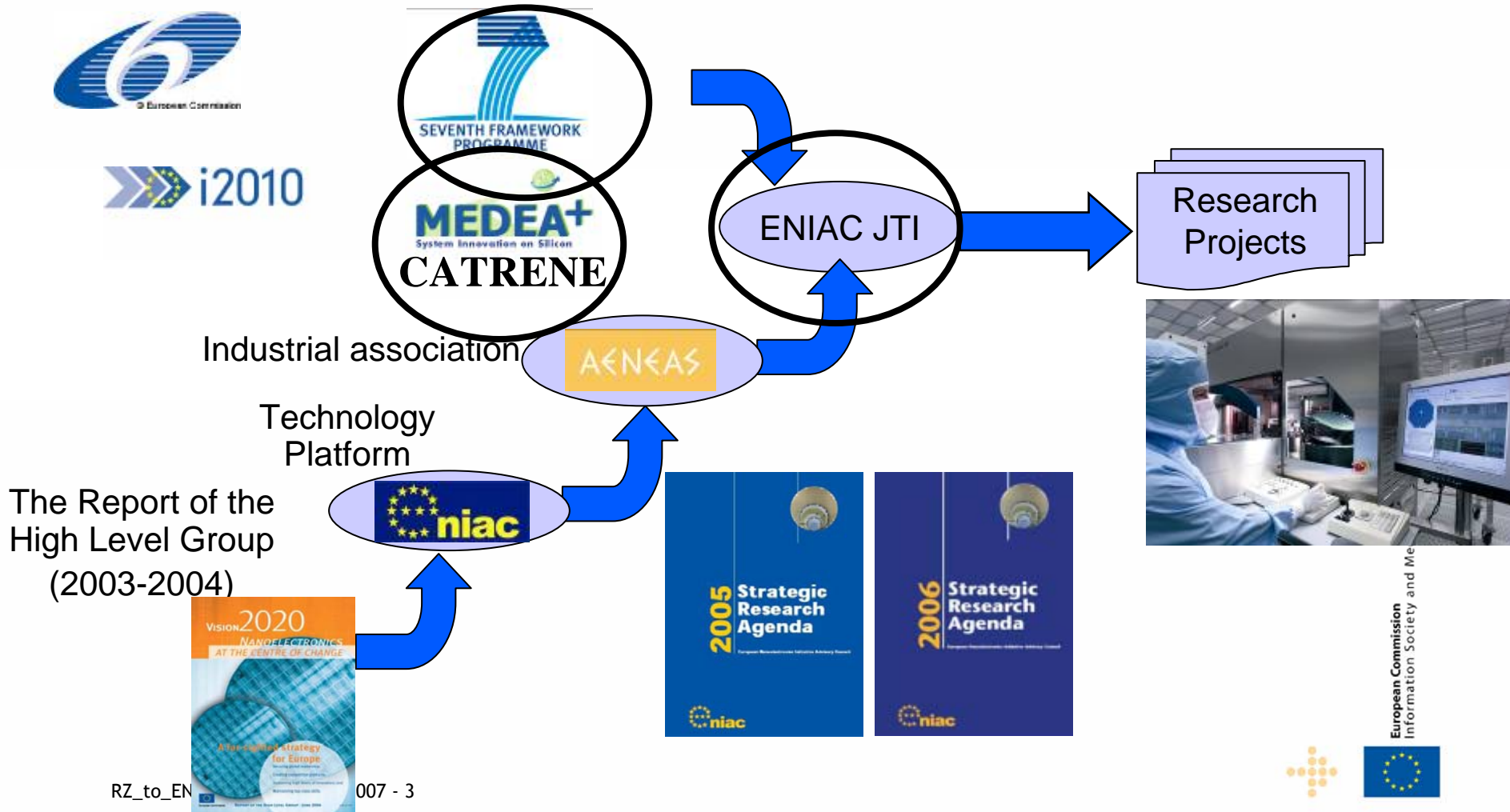
ENIAC (Joint Technology Initiative)

- Public private partnership to define, set-up and execute a Research Agenda (RA) to implement a part of the SRA
- a legal entity *ENIAC Joint Undertaking* involving some Member States, the Commission and AENEAS to administer the implementation of the RA.

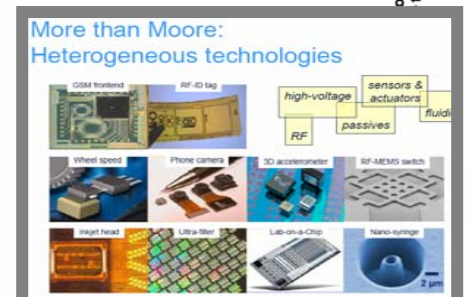
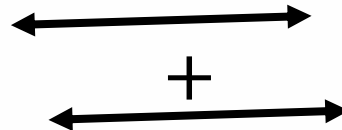
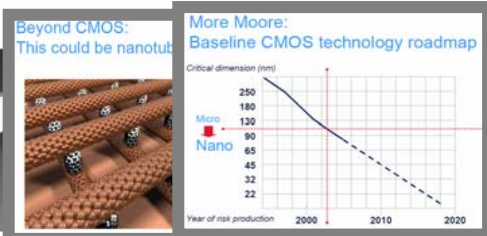
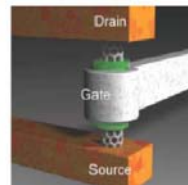
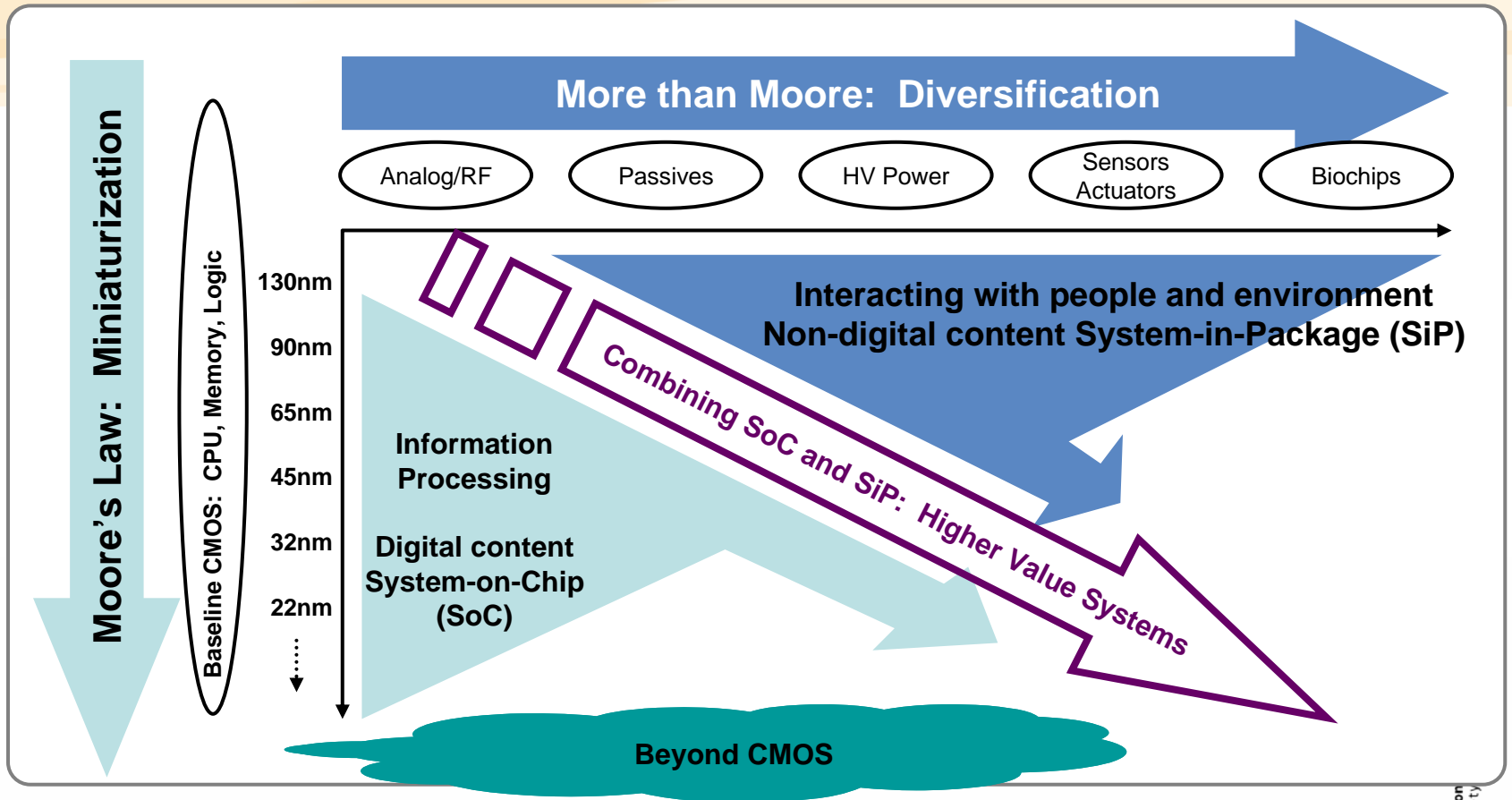
AENEAS

- Association representing industry, institutes and other research actors

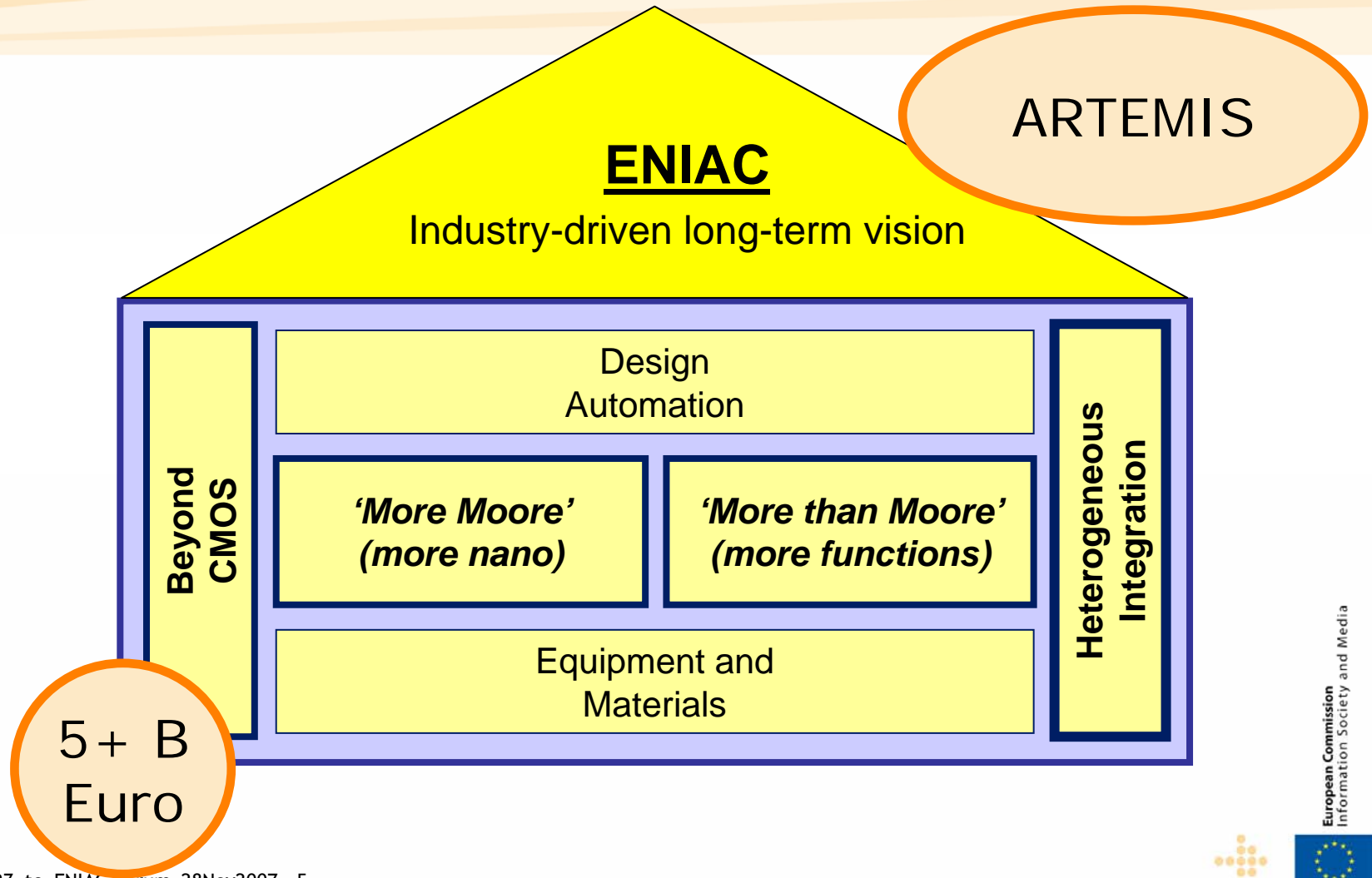
Building up a European strategy



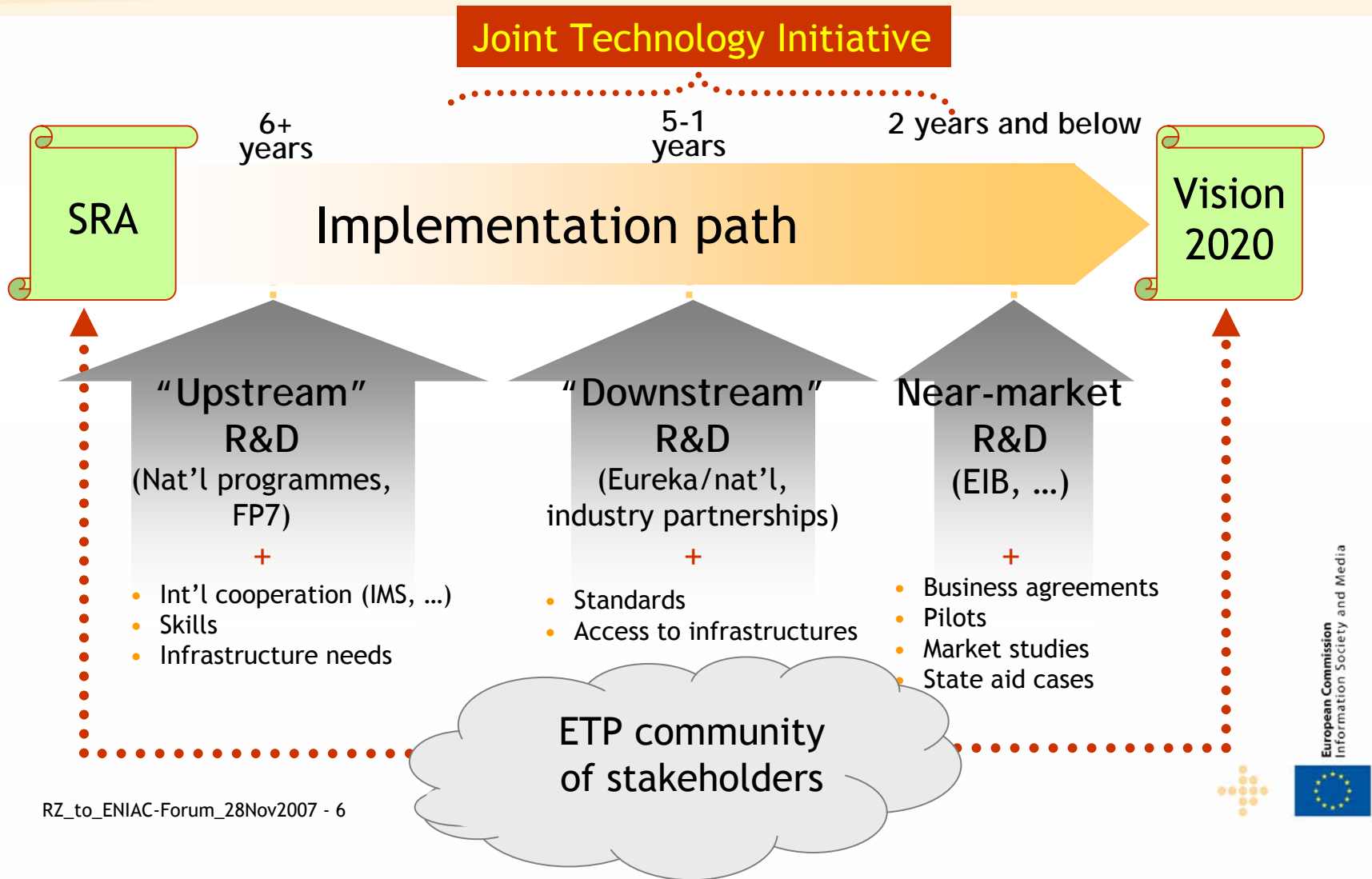
European Roadmap for nanoelectronics



Nanoelectronics research: a vision and agenda



Implementing the Strategic Research Agenda



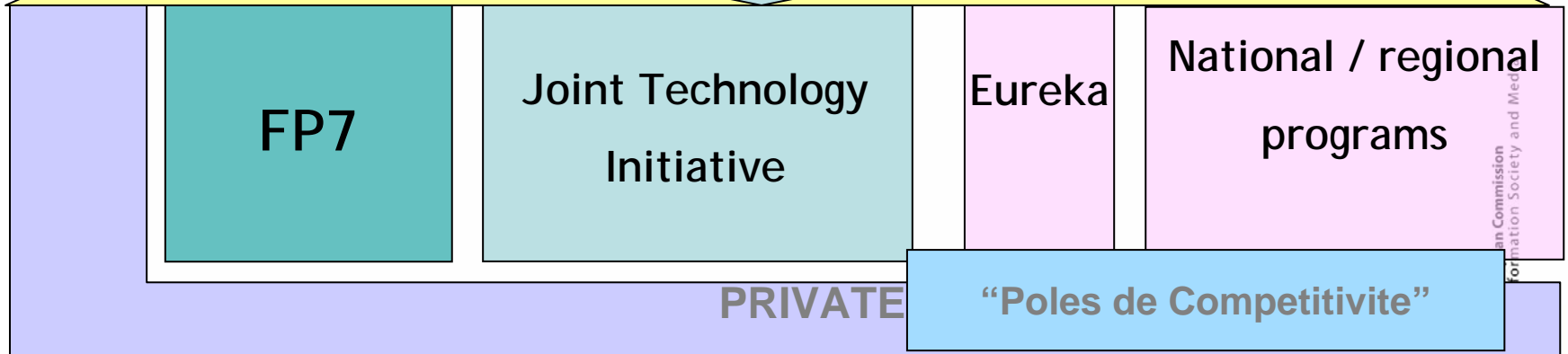
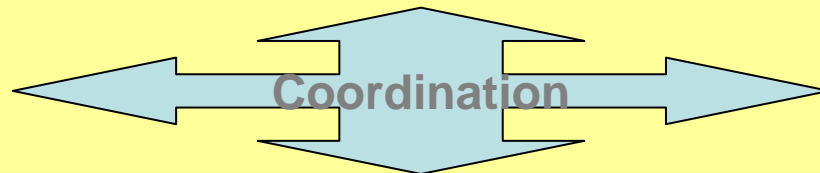
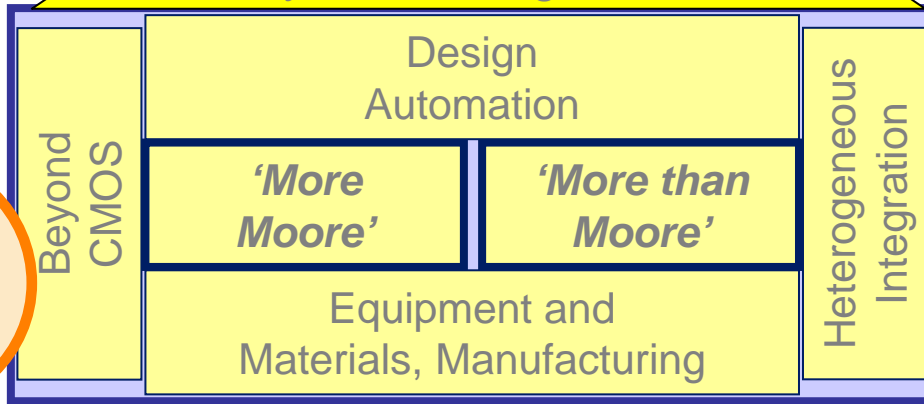
Coordinated approach to

SRA implementation

ENIAC

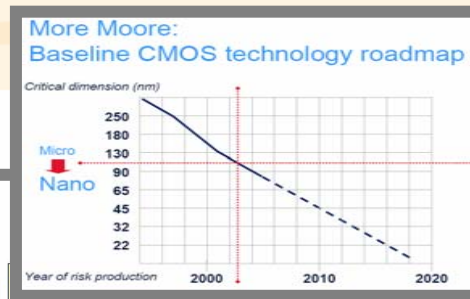
Industry-driven long-term vision

5 + B
Euro

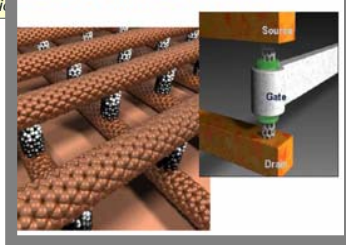


ENIAC & FP7: Next-Generation Nanoelectronics Components & Electronics Integration & all

- Smaller, higher performance, lower cost:
 - "More Moore"
- Long Term Future: "Beyond CMOS"
- Integration & diversification:
 - SoC: Systems-on-Chip
 - SiP: Systems-in-Package



More than Moore: Heterogeneous technologies



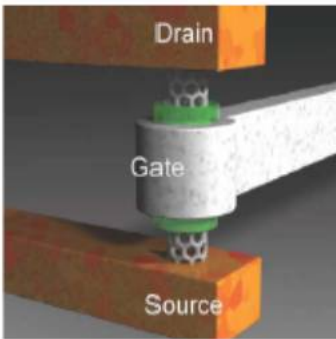
Technology

Design

Manufacturing

Equipment, Nanoscience

Call 1 86 M€
 70 M€ CP (min 27 M€ IPs and 21 M€ STREPs)
 8 M€ NoE
 8 M€ CSA



Future Emerging Technologies
 Micro and nano-systems
 Nano-photonics
 NMP Programme

**2007-13:
 + € mn!!!**

ENIAC JTI

A €3bn (2008-2013) public-private partnership between industry, Member States and EC to increase the competitiveness of the European nanoelectronics industry

Making ERA in
electronics a reality!



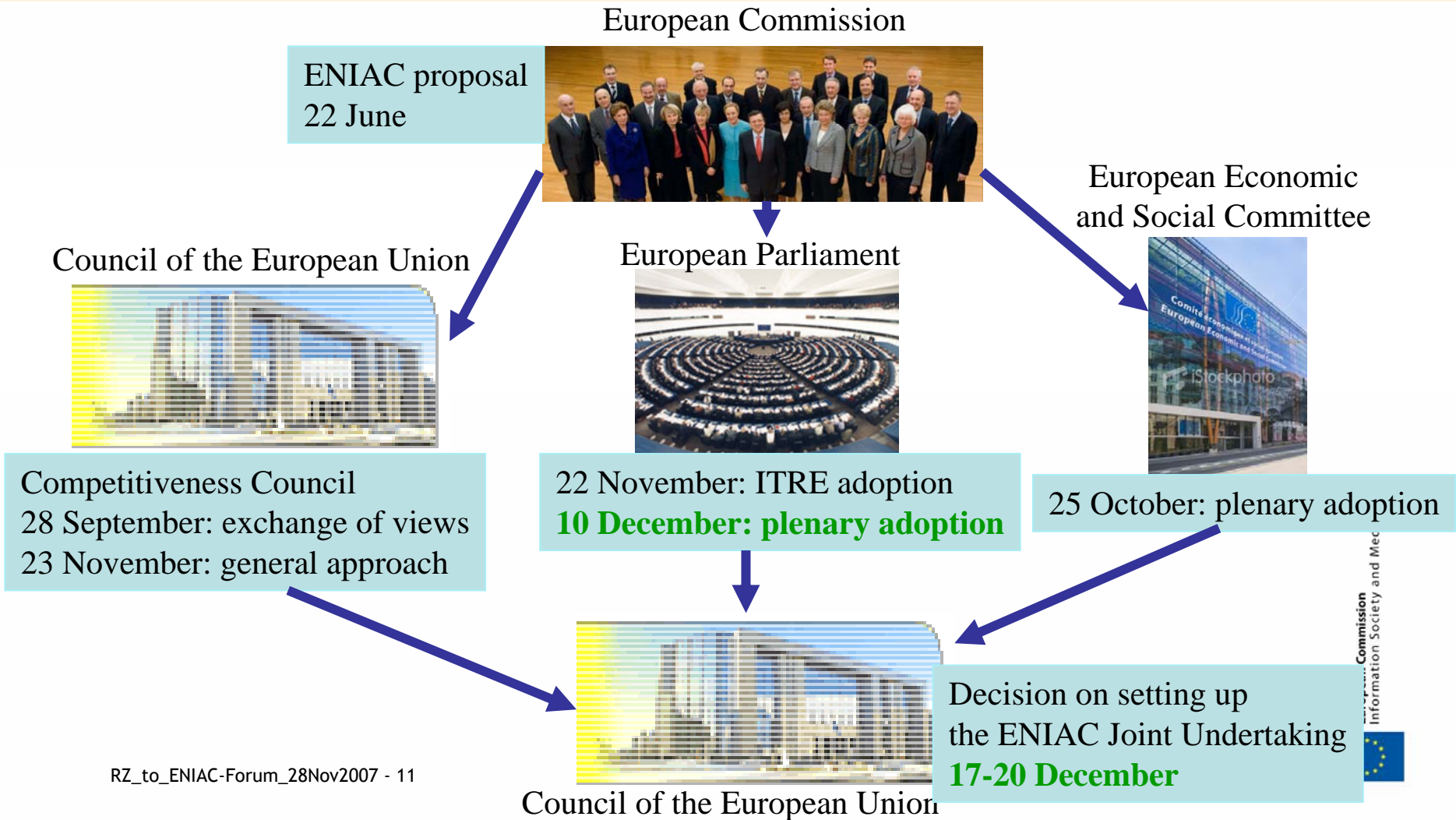
What can be expected from the JTI?

-objectives -

- Industrially driven, industry oriented applied research program incl. transfer in applications
- Major objectives and capability to mount larger initiatives (time and resources) to create needed critical mass
- High level of SME participation
- Long time assured strategic partnerships
- New type of program implementation with greater flexibility, fast cycle time, decentralisation, shortened time to market of RTD results
- Common approach, common processes and co-funding by MS and Commission towards common goals
- Increased R&D funding

**Boosting the competitiveness of EU industry
whilst building the European Research Area**

The inter-institutional process



Council's view

General approach of the Commission approved, with the following considerations :

- The JU is a Community Body
- The JU should have a clear sunset clause (limited lifetime)
- Preparatory actions should allow for fast start
- National eligibility criteria for funding should be considered in the evaluation process by the JU



Parliament's view

Positive view on the establishment of a Joint Undertaking in the field of nanoelectronics, with emphasis on the need for:

- Flexible rules and procedures for the JU
- a strong European focus
- openness to innovation drivers (SME's and small research teams)



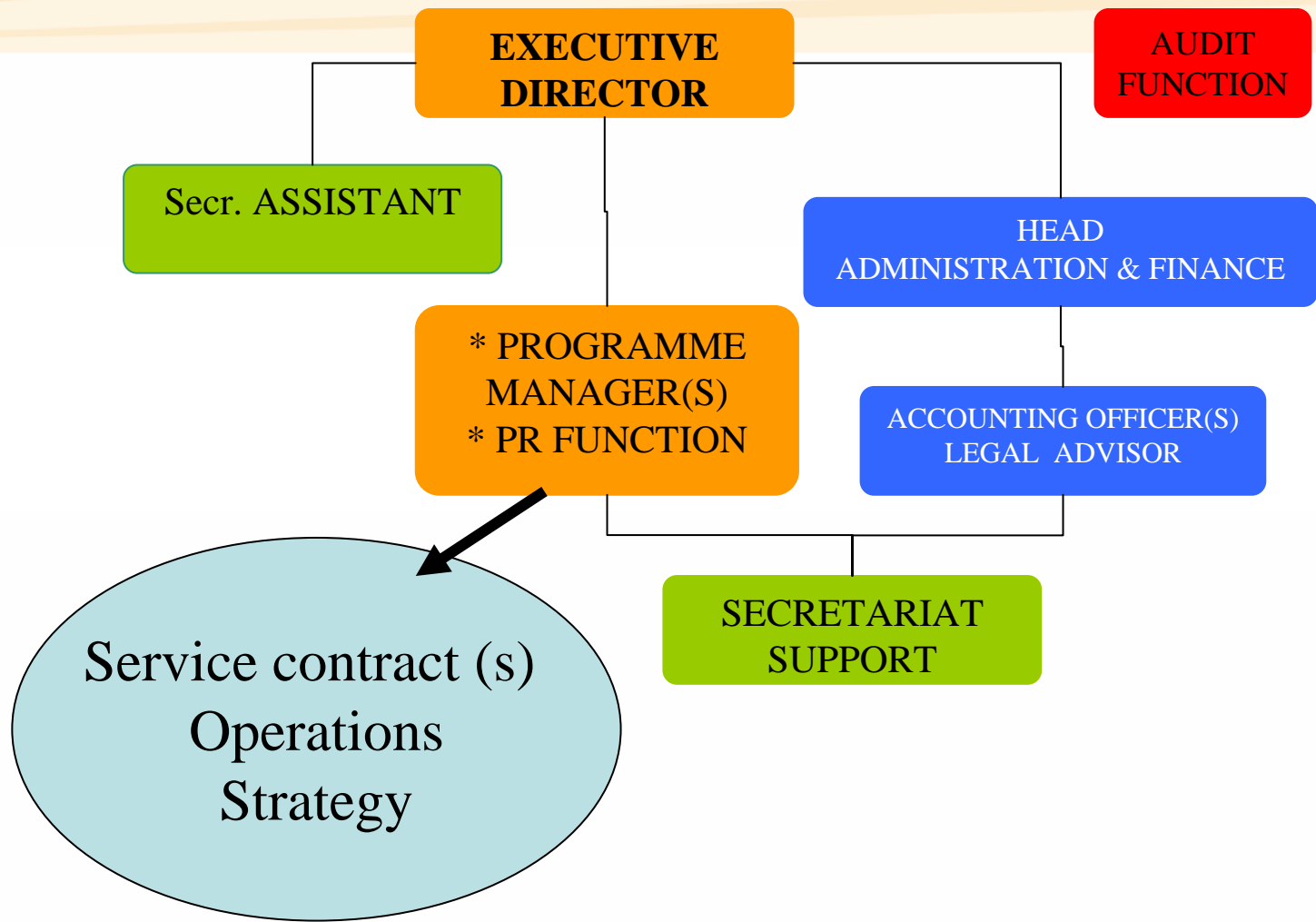
ENIAC Joint Undertaking: Implementing the JTI

- Founding Members
 - European Community
 - AENEAS, association representing industry and the research community
 - Member States who request it
- Joint Undertaking set up by the Community (art. 171)
 - Community body with seat in Brussels
 - Duration till 31-12-2017 (2013 for calls)
 - Operational costs:
 - EC max. €10m
 - AENEAS 1% overall project costs (max. €30m)
 - Member States in-kind contribution
 - R&D costs:
 - Community (FP7): up to €440m
 - States: > 1.8x Community contribution
 - R&D actors: in-kind >50% of costs



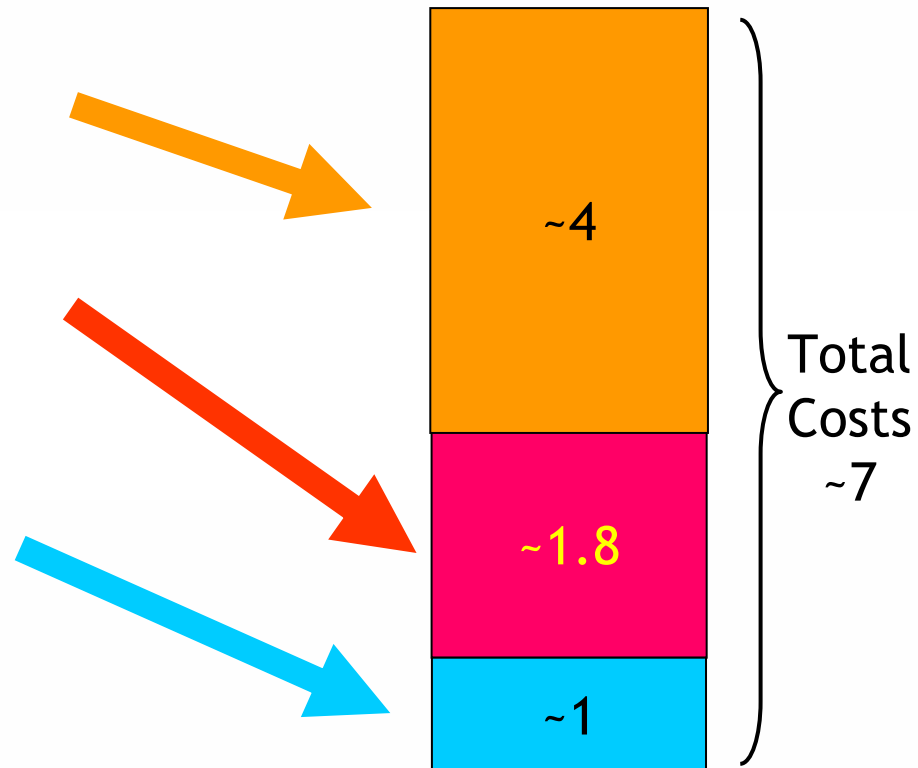
ENIAC Joint Undertaking: Implementing the JTI

Organisation Chart (initial 2008)



Joint Undertaking: Financing scenario

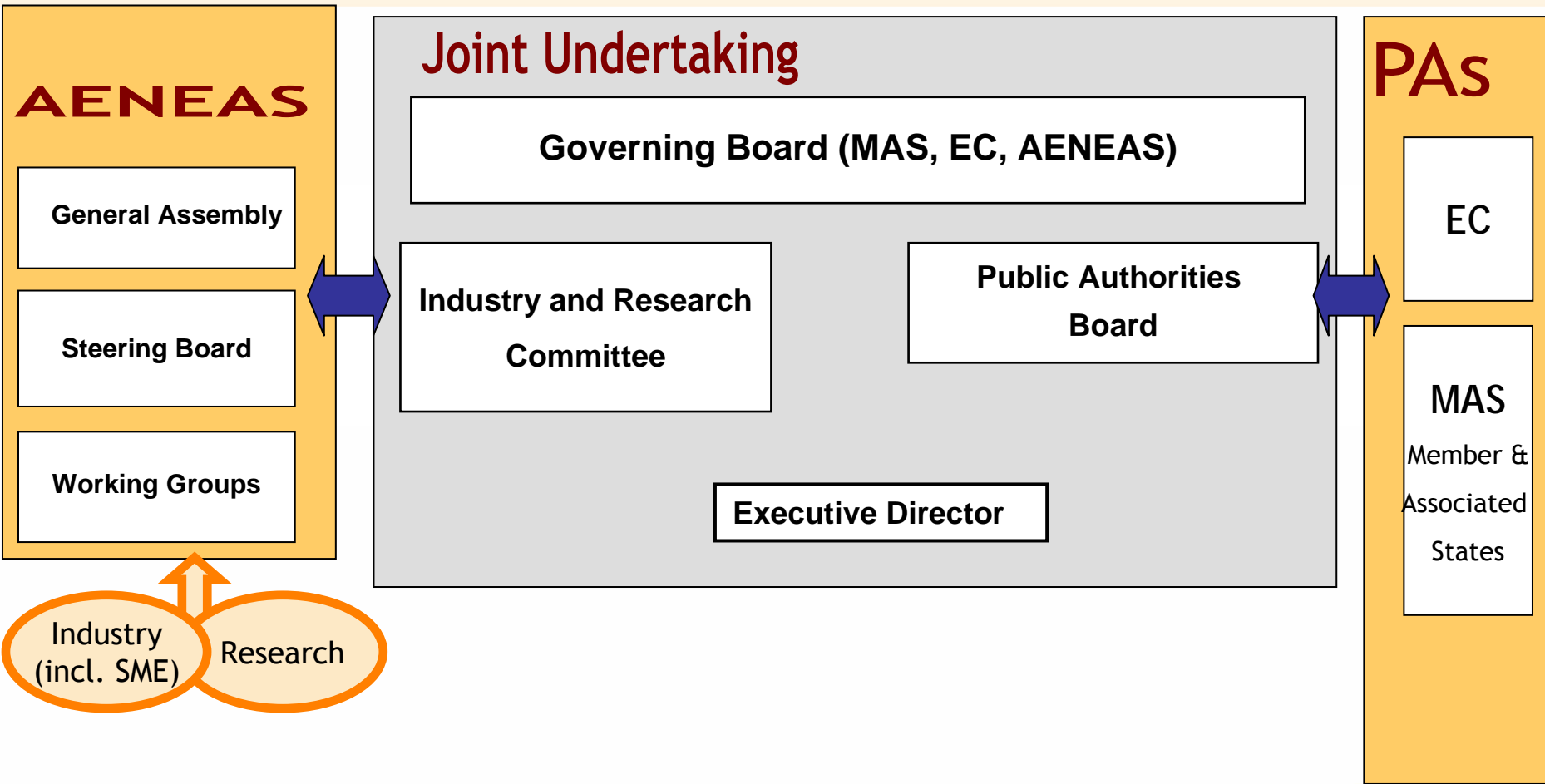
- Industry:
 - At least 50% in-kind
- Participating States:
 - Earmarked budgets
 - National contracts
 - Contribution conformal to national practices
- Joint Undertaking:
 - Flat rate contribution to all participants (16.7%)



+
industry and EC pay JU operational costs
& some non-R&D activities

Expected total 2008-2013: €2-3 B

Structure of the Joint Undertaking



What can be expected from the JTI ?

- timing-

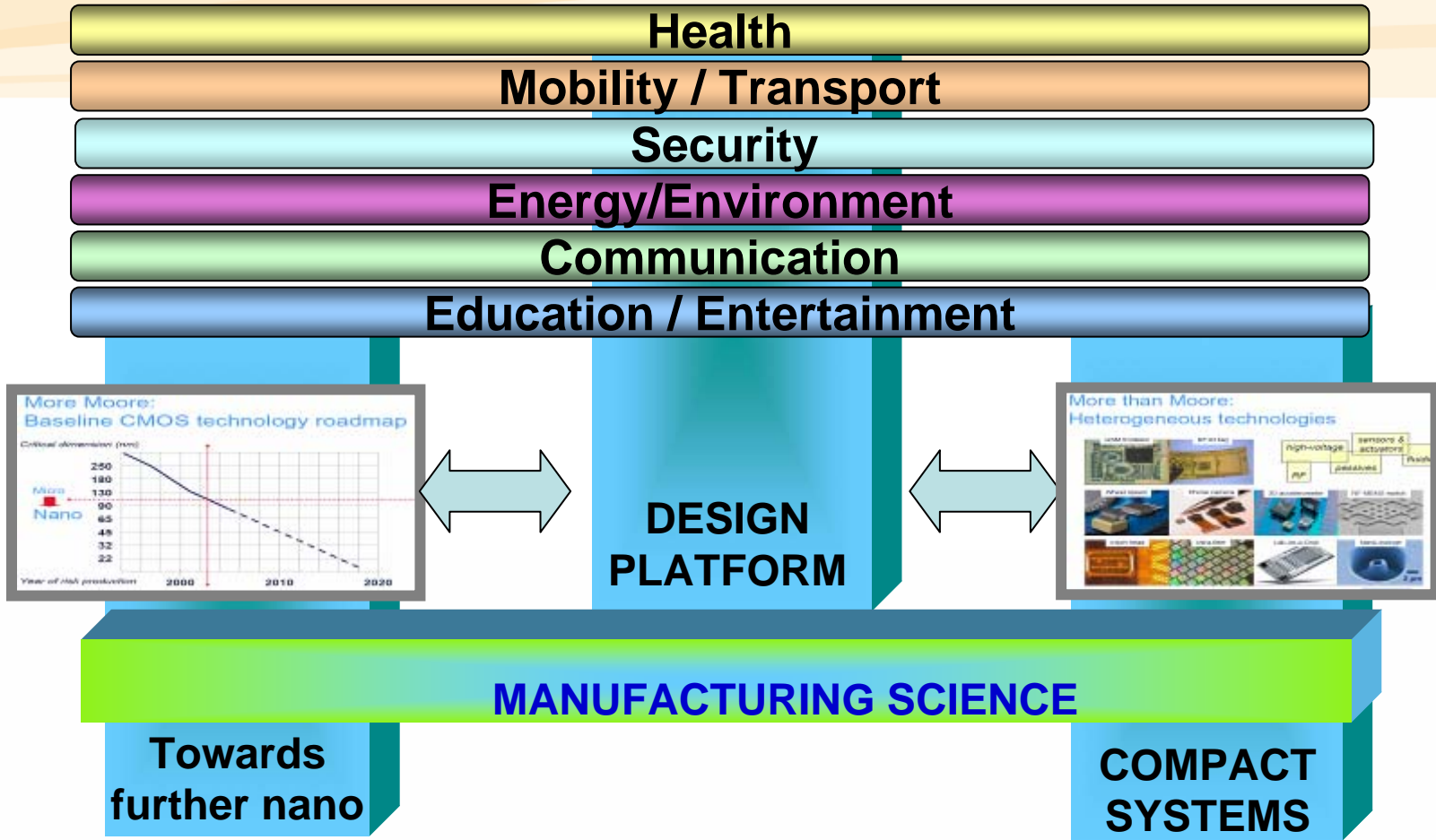
First calls Q1 2008

First contracts end 2008

Joint Undertaking up and running mid 2008



JTI Contents



A 3 B€ initiative (2008-2013) run in partnership with industry association AENEAS, open to all Member States.

EUREKA: CATRENE



The ambition: to provide solutions for new lead markets and to create European leadership in these new market segments.

Concept of **lighthouse projects** addressing large and global socio-economic needs and that create critical mass, address the complete value chain and get support from public authorities

Ex.: Secure Communications and trusted information
Transportation (autonomous vehicles)
Healthcare, aging society (ubiquitous health monitoring and treatment)
Energy saving and Environment
High quality media and entertainment (mobile TV)
Next generation equipment and materials



Work areas: specific fields of activity of lighthouse projects directly related to nanoelectronics

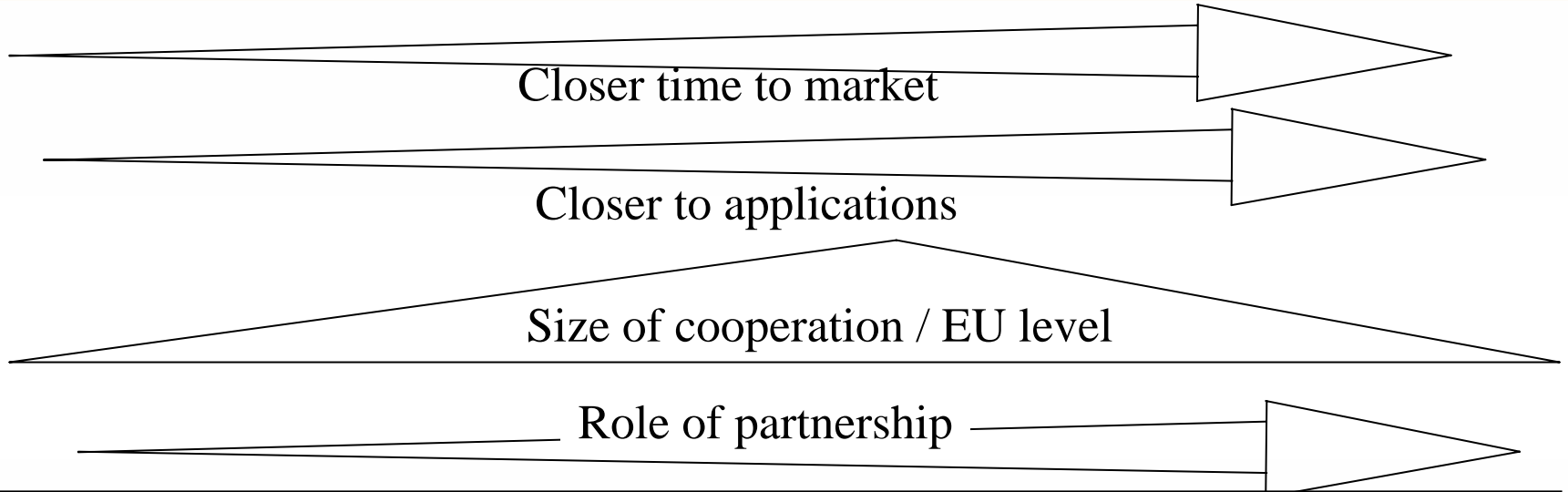
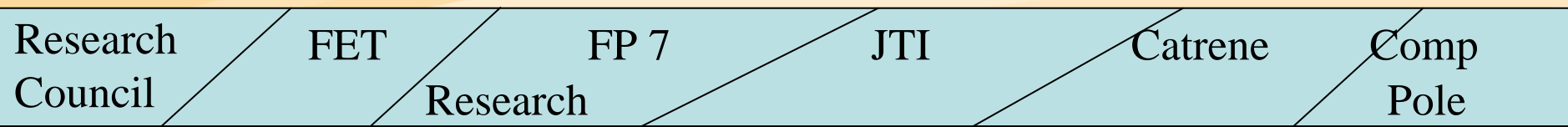
Ex:

- Design automation for extreme SoC and SiP
- Technology platforms for next generation of More Moore, More than Moore and heterogeneous systems integration)
- Manufacturing science
- Smart sensor and actuating systems, SiP

- High quality, high speed user centered communication systems
- Smart card systems, trusted platforms
- Transport electronics for safety, security, environmental protection and communications
- Healthcare devices and systems
- Energy- efficient devices and energy control systems
- Devices and systems for digital entertainment

Catrene projects.

The funding landscape in Nanoelectronics Research



University driven / Institute driven - industry guided / industry driven & executed

Role of strategic alliances: global alliances, involvement of system houses, involvement of material and equipment suppliers

Role of infrastructure: from research tools towards the fab is the lab

Converging technology: a lot of room at the interface, a new multi-disciplinary game with new actors and new rules? System thinking from the beginning?

Conclusion

European Commission will invest in nanoelectronics from the regular FP7 Programme, launch a 3BEuro worth Program in Public Private Partnership with industry and Member States (450 MEuro FP7; 820 MEuro from Member States, rest from industry) on top of and in coordination / cooperation with other Eureka, Member States or Regional Initiatives (incl. education and infrastructure) to fulfil part of the 5 BEuro Strategic Research Agenda for cooperative RTD in the nanoelectronics industry.



The High Level Statements

“ Investing in innovation is investing in wealth and social progress, investing in nanoelectronics and nanotechnology today is investing in future innovation.

All major developed States in the world are investing heavily in nano-tech research.

Europe and its Member States must assure access to nanotech competence as one of their main strategic assets to safeguard their long term innovation potential to create wealth and well being”

The 7th framework and new JTI being set-up are contributing to this high level objective



Thank you !

More information:

http://cordis.europa.eu/fp7/ict/nanoelectronics/eniac_en.html

For more information

European research on the web:

<http://cordis.europa.eu>

<http://cordis.europa.eu/fp7>

http://cordis.europa.eu/technology-platforms/home_en.html

Information Society and Media:

http://ec.europa.eu/dgs/information_society/index_en.html

<http://cordis.europa.eu/fp7/ict>

ICT challenge „Components, Systems and Engineering“:

http://cordis.europa.eu/fp7/ict/programme/challenge3_en.html

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