From ENIAC/ARTEMIS/EPoSS to ECSEL:
Electronic Components and Systems for European Leadership

NETH-ER Seminar on “Partnerships in Horizon 2020: a powerful tool?”
Brussels, September 24, 2013

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Electronics & systems: Driving innovation across the economy and society

~25% of AV

~33% of Added value

~41% of AV

Electronic Components

ICT equipment

ICT devices

Photonics

~25% of AV

~35% of Added value
Building up a European strategy for publicly funded cooperative research

Public Authorities

Industrial association/Technology Platforms:

- EPoSS
- Aeneas
- ARTEMIS

HORIZON 2020

ECSEL

EUREKA

Research Projects & Pilot Lines
Achievements in establishing ARTEMIS JTI

• Pan-European Strategic Research Agenda developed for Embedded Systems – “Nervous System of Society”
  – Key technology driving product innovation and added value, fostering industrial competitiveness and enabling societal applications

• Novel PPP scheme created for industrial R&D
  – Pioneering innovative project co-funding from EU and national budgets
  – Combining best elements of EUREKA and FP approaches

• European Research Area (ERA) enhanced for Embedded Systems
  – Bringing together Europe’s fragmented efforts
Main issues encountered in ARTEMIS JTI

1. Status of Joint Undertaking as Community body
   - No real public-private partnership
   - Lack of flexibility
   - Red tape

2. Three fundamental problems in pooling national resources
   i. Synchronizing and harmonizing national project funding between countries
   ii. Coping with unbalance in available national budgets
   iii. Combining national and common interests in joint selection of proposals

Experiences are similar in ENIAC, EUREKA ICT clusters, ERA-NETplus, Article 185 initiatives (AAL, Eurostars) and Joint Programming Initiatives, albeit to varying degrees and in spite of pragmatic ways of working.
JTI Sherpas’ Group Report: Designing together the ‘ideal house’ for public-private partnerships in European research

ETP 2010 Conference, Brussels, 11-12 May 2010
Recommendations: Legal status & governance (1/2)

Key principles:
- A risk-tolerant and trust-based approach
- Flexibility to adapt to the specific needs of the different sectors and challenges

Certain legal status types examined:
- Private law legal entity
- Contractual partnerships
- Community body under the current Financial Regulation
- Recognition of the PPP as a special body under the revised Financial Regulation
Recommendations:

- Recognition of PPPs as special bodies under the revised Framework Financial Regulation (FR)
- Seize the opportunity of the current FR Triennial Review
- Move towards a more risk-tolerant and trust-based approach in line with Dec 2009 Competitiveness Council
- Continue and strengthen cooperation with the European Economic Recovery Plan PPPs
Key recommendations of JTI Sherpas implemented!

- New Financial Regulation allows setting up special “PPP bodies”
- Financial rules for PPP bodies are “lighter” than for Union bodies
  - About 50% less pages and articles
  - No discharge from Parliament needed
  - Less involvement of Court of Auditors
  - Risks and costs taken into account in control policy
  - Fewer references to personal liability of staff officers
- Two other legal structures proposed by JTI Sherpas as alternatives for Union body will also become possible
  - Private law entity
  - Contractual Public-Private Partnership
Build on experiences gained in ARTEMIS and ENIAC

- First and second interim independent evaluation
  - Initiatives remain highly relevant and considerable progress in reaching the objectives has been made
  - Efficient and effective – in particular with respect to addressing new challenges bridging the gap to exploitation (though start-up problems)
  - Need for an overarching Electronics Components and Systems strategy
  - Further simplification and improved governance, towards a 'one-stop-shop'

- Study by independent experts on the future impact of ARTEMIS and ENIAC
  - Scope for synergies between the areas of micro- and nanoelectronics (ENIAC) and embedded systems (ARTEMIS)
ECSEL: public public private partnership

The tri-partite JTI allows to align strategic programmes at EU and national levels

Parties are MS, private members and EU

The private members will likely be AENEAS, ARTEMISIA and EPoSS
Sources of financing

- EU up to 1.215 B€ of which 15.255 M€ for administrative costs

- 1.2 B€ by participating Member States

- In-kind contribution of 2.4 B€ from industry of which 1.7 B€ from the constituent members (and their affiliates) of the private members. Private members contribute 19.710M€ for administrative costs
Implementation in JTI

Intensity of investment

Industrially-driven R&D

Pan-European Innovation:
Take-up, Assessment, Infrastructure, Design services

Capital-intensive R&D&I,
Pilot lines, Demonstrators / Applications

Implementation in H2020

TRL

Basic Principles Observed
Technology Concept Formulated
Experimental Proof of Concept
Technology Validation in lab
Tech valid. In relevant environment
Demonstration in relevant environment
Demonstration in operational environment
System complete and qualified
Successful mission operations

Technological Research Pillar 1
KET Pilot Line and demonstrator projects Pillar 2
Manufacturing & KET Deployment Project Pillar 3
Private partners propose the Research & Innovation agenda
Public authorities propose a multi-annual financial perspective
Private partners propose the Research & Innovation activities
Public authorities propose commitments for the calls
Budget includes all items and staff policy plan
Implementation

- National commitments
- EC commitment
- Evaluation criteria
- Funding rates
- Eligibility criteria

Annual Work Plan

Calls for Proposals

Proposals

Evaluation, selection and funding

GB approval

PAB approval

PAB approval

• Independent evaluation
• Selection process
This PPP compared to ENIAC and ARTEMIS

- A **single JU** with an **extended scope** covering micro-and nanoelectronics, embedded/cyber physical systems and smart systems
- A **balanced tri-partite** - Members have equal voting rights and have veto rights
- **Balance** between **EU** and **national rules**
  - Use of HORIZON2020 definition of eligible costs
  - Use of national eligibility criteria for participation
- **Allow to progress** towards a **one-stop shop**
  - Member States may entrust ECSEL with the implementation of their contribution.
  - The JU will implement the EU contribution
Joint opinion of ARTEMIS-IA, AENEAS and EPoSS

- Some issues are still to be resolved in proposed Council Regulation
  - Associations cannot be made responsible for investments of their members
  - Include affiliated companies in valuation of private contributions
  - Avoid extra book keeping for valuing contributions beyond eligible costs
  - Postpone deadline for audited reports on private contributions to May 31
  - Clarify provision on liability of JU members
  - See detailed joint comments of ARTEMIS-IA, AENEAS and EPoSS

- The thee associations are very positive about this initiative and very eager to get it started asap in 2014!