Research and technological development: setting up the ENIAC Joint Undertaking, nanoelectronics

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The Commission presented its annual progress report on the activities of the Joint Technology Initiative Joint Undertakings (JTI JUs) in 2012.

The Joint Technology Initiatives are public-private partnerships in industrial research at European level that are now well established and have reached cruising speed. They were set up in 2007-2008 under the Seventh Framework Programme in **five strategic areas**: (1) Aeronautics and Air Transport (Clean Sky); (2) Public health - Innovative Medicines Initiative (IMI) JU; (3) Fuel Cells and Hydrogen (FCH) JU; (4) Embedded Computing Systems (ARTEMIS) JU; (5) **Nanoelectronics** (ENIAC) JU.

Participation and geographical coverage: JUs are successful in funding highly specific, industry-driven research and that **stakeholders are getting more acquainted with the modus operandi of these new instruments**. Participation in terms of numbers of projects selected for funding remained stable in the last two years while the **overall success rate increased from 35.8 % in 2011 to 45 % in 2012**. Concerning industrial participation in 2012, large companies represented 31.1% of total participations and SMEs another 30%. **SMEs participation increased from 28% to 30%** in the last two years (2011 and 2012).

In terms of distribution of participation from Member States and Associated Countries, in 2012 as in the previous year the five JTI JUs involved, on average, **20 different countries** in the implementation of their research agendas.

First results and promising advances: in the **nanoelectronics components sector**, a major effort concerned the launch, evaluation and selection of 5 Manufacturing Pilot Lines. These projects include advanced R&D environments to allow the testing and demonstration of new technologies in close to production conditions.

This significantly improves Europe's ability to close the gap between technology development and deployment. The pilot lines provide access to advanced technologies to actors, in particular SMEs.

Two success stories were highlighted:

- **the IMPROVE project**: the partners developed computational models for equipment behaviour and history enabling virtual metrology, predictive maintenance and adaptive control plans to improve throughput, stability and reproducibility, and the overall wafer fabrication efficiency;
- **the LENS project**: the 12 partners in the LENS project considerably advanced the multiple facets of the technology using double exposure. Lithography is the essential technology for scaling semiconductor devices.

Challenges and perspectives: for the future, a number of challenges remain open:

- **relatively small size of the JUs** and their relatively high running costs is still a major challenge;
- **maintaining the level of commitment from Industry and Members States**: certain difficulties have arisen in recent years in matching funds from industry and Member States and only in 2012 did the trend reverse;
- **effectively integrating results achieved in research projects into the Commission communication and dissemination system**: the JUs will probably be called upon under Horizon

2020 to adopt tools and working arrangements that will enable all parties involved to constantly assess results and to use them.

To summarise the **experience gained** in the first years of autonomy of all the Joint Undertakings, the following **successful results** can be highlighted:

- **JTIs are continuing at a steady pace** to reach their objectives in research and beyond;
- in terms of management, the JTI JUs have gained **speed**. In 2012, they generally reduced their Time to Grant (TtG), which is now 11.6 months on average;
- the **visibility** of JTI JU activities was also enhanced in 2012, among stakeholders and beyond;
- the JTI JUs' achievements started to be monitored and evaluated against a set of **key performance indicators** (KPIs);
- **SMEs are attracted to the JTI JUs' research topics**, especially because of the stability and continuity of the research and innovation environments, the funding arrangements and the involvement of larger value chains. Overall, SMEs have received about EUR 170 million, which accounts for roughly 27% of all EU funding available after evaluation;
- **industry commitment** to the achievement of general objectives remained stable and overall stakeholder participation continues to be well balanced following major updates in 2011;
- the JTI JUs **strategic research and innovation agendas** now include a **more ambitious approach towards innovation**, in line with Horizon 2020;
- lastly, respondents especially highlighted the clear **European added value** of PPPs in specific technological sectors.

Another interesting insight on progress achieved so far will be provided by the second interim evaluation, which will cover the period from setting up until 2013 and will be published as a separate report by November 2013.