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ICT researchers line up to compete for €1 billion prize

Nuala Moran, Science|Business

Six advanced computing projects have been shortlisted to compete for EU Flagship status and access to total funding of €1 billion. The six have been awarded €1.5 million each to develop their programmes before two winners are selected in 12 months time

Neelie Kroes, European Commission vice president likened the potential impact of the projects to the Apollo mission to the moon. Photo: EC



create important new markets and deliver significant social benefits by helping to deal with problems like chronic disease, climate change and natural disasters.

Neelie Kroes, European Commission vice president likened the potential impact of these projects to the Apollo mission to the moon. "Remember the space race? Let us make more successes we will remember not just for today, but for a lifetime," she told delegates.

The selected projects include research to develop semiconductors based on the new wonder material graphene – which combines the ability to let electrons flow much faster than silicon, with the facility to mix electrical and optical functions; moves to develop computer simulations of the human brain and body that can then be fed with data from individual patients to diagnose disease and establish the best treatment; the development of wearable nanosensors that operate with energy harvested from the environment, allowing them to continually monitor factors such as heart rate, blood sugar level and body temperature; building a computer model of how societies operate as a kind of "flight simulator" that can be used to model the effects of policy decisions and help deal with natural disasters; and the development of empathetic robot companions that can help out at home and in hospitals.

The plan to set up the Flagships was announced at the previous FET meeting, held in Prague in 2009. The aim is to pool resources to overcome the national fragmentation in fundamental ICT research, through ten-year multi-million Euro joint national/EU initiatives that cross-fertilise ICT with other disciplines. This should enable European researchers to explore more risky areas, leading to revolutionary breakthroughs. Although the Prague gathering was the first FET conference, the programme itself is now more than 20 years old. As the only basic research effort until the advent of the European Research Council in 2007, it seen as one of the crown jewels of EU-funded research.

Pulling together multidisciplinary projects

The six projects announced yesterday are each led by a single institution, but will pull together dozens of collaborators across Europe, from academe and industry. They also look beyond traditional ICT research to link up with specialists in health, materials science, robotics and various biological sciences. For example, the Human Brain Project, led by Henry Markram at École Polytechnique Fédérale de Lausanne, includes 13 other universities and brings together more than one hundred organisations covering disciplines including neuroscience, genetics, applied mathematics computer science, robotics and social sciences.

Similarly, the Graphene project, headed by Jari Kinaret at Chalmers University of Technology in Sweden involves over 130 research groups, representing 80 industrial and academic partners in 21 European countries.

Kroes said the really important thing about the two eventual winners will be their scale. It has never been more important to invest in research, she said. "Unfortunately we are not making enough of the right investments yet." Budgets in Europe are too small scale, too focussed on public spending and too fragmented.

Firing the starting pistol on the race for Flagship status, Kroes said, "We are in a new era for ICT investment in Europe." The envisaged spending of €100 million per project over ten years will put Europe,

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